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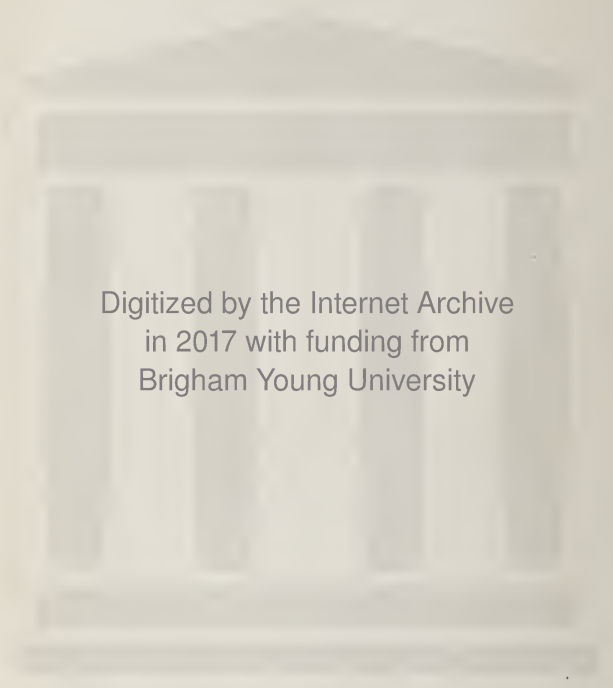
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BULLETIN

OF THE

ESSEX INSTITUTE,



VOLUME I

1869.

SALEM, MASS.

ESSEX INSTITUTE PRESS.

1870.

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BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. I.

SALEM, MASS., JANUARY, 1869.

No. 1.

One Dollar a Year in Advance. 10 Cents a Single Copy.

PROSPECTUS.

THE BULLETIN of the Essex Institute is intended to give to the public, such portions of communications made to the Essex Institute at its semi-monthly and other public meetings, as are of popular interest.

A brief summary of *all* the proceedings* at each meeting will be given, which will contain the *titles* of all written or oral communications rendered, and the names of their authors.

Such papers as are somewhat dryly historical, or rigidly scientific, will be reserved for publication in another form.

A small space in each number will be used to announce the recent correspondence, and donations to the Library and Museum, and to state deficiencies ex-

* The Quarterly, hitherto published under the title of "Proceedings of the Essex Institute," will be discontinued with the number which completes the records to January 1st, 1869.

isting in the collections of the Institute, and the methods in which its friends may best aid in rendering them more complete. There will also be inserted a list of some of the duplicate volumes, pamphlets, newspapers, etc., in the library which will be offered for exchange or sale.

It is confidently expected that the variety and interesting character of the communications this volume will contain, will make it a favorite with the public, while its low price will bring it within the means of all.

It will be issued at the close of each month in its present form, and in sheets of not less than sixteen pages with occasional supplements.



THE OLD PLANTER'S HOUSE.

[See Historical Collections of Essex Institute, Vol. II, p. 39.]

AN EARLY VOYAGE BEYOND THE CAPE OF GOOD HOPE.

"THERE WAS A SHIP QUOTH HE."

YET in this case not a myth, but a veritable ship, henceforth to be recorded among many others whose names are an honor to Salem.

This ship was one* of the first to sail from an American Port for commercial purposes to the Indian Ocean.

For an authentic account of this voyage we are indebted to Mr. Jonathan Tucker of Salem, whose grandfather was master of, and whose father was one of the crew of the vessel. Family traditions, confirmed by the ship's papers left by his grandfather, had amply qualified him to give the narrative to which we listened.

About the close of the year 1786, what was then considered an adventurous voyage, around and beyond the Cape of Good Hope was projected by Elias Hasket Derby, Esq. For a vessel he took a Bark of 240 tons burden. She had been captured from the British during the revolutionary war at a time when she had on board a company of Light Horse troops, therefore, when subsequently purchased by Mr. Derby he named her "Light Horse."

For captain, it was not unnatural that he should select Capt. John Tucker of Salem. He had been a successful commander of privateers, and had as tradition says, cap-

*The *first* vessel to leave an American port for the extreme east was the ship "Grand Turk," Ebenezer West, Master. She cleared from Salem for Canton in January 3, 1786, but her voyage was not a declared success, until four months after the commencement of the voyage here recorded.

tured the "Light Horse." He had also proved a successful merchant, as well as an energetic shipmaster, and had early retired from a seafaring life. He was at this time forty-four years of age and combined in himself so happily the qualifications for such an expedition, that Mr. Derby did not spare the most earnest solicitations to secure his coöperation, which was at last obtained, Mr. Derby stipulating to pay the unusually large compensation of three thousand dollars.

The crew provided, numbered in all fifteen men, among whose names are found those of many, who afterwards became highly estimable and prominent citizens of Salem. Most generous provision was made for their health and comfort. The list of ship's stores comprise more than one hundred items. The outfit of a large adventure, at the present day, would not exceed the quantity and variety that this exhibits.

It is interesting to notice the exports which comprised her cargo. They were notably for the most part the miscellaneous products of a new country, comprising:—Beef, pork, butter, tobacco, fish, tar, pitch, turpentine, oars, cheese, mackerel, flour, hams, lumber, masts, iron, iron hoops, sperm candles, rum, cordage, tallow candles, lard.

She carried also the following foreign products:—Geneva gin, claret wine, loaf sugar and olive oil. An exchange of these articles was sanguinely expected to yield a profit of cent. per cent. The whole value of the cargo was £5,947, 4s. 8d.

From the date of this voyage, it will be perceived that we had as yet no national government; therefore, a protective sanction, serving as an introduction to foreign countries and their governments, was given by the Governor of Massachusetts in the following form:—

COMMONWEALTH OF MASSACHUSETTS.

[L. S.]

To all who shall see these Presents, Greeting.

It is hereby made known that leave and permission has been given by the Naval Officer to Capt. John Tucker, Master and Commander of the Bark called the Light Horse, now lying at Salem, within this Commonwealth, to depart from thence and proceed with his vessel and cargo on a voyage to the Cape of Good Hope, the Isle of France and Batavia, and that the said Bark belongs to Elias Hasket Derby, Esq., a merchant of character and high reputation, a subject of the Commonwealth, being one of the thirteen United States of America.

Now, in order that the said Master may prosper in his lawful affairs, it is earnestly requested and recommended to all who may see these Presents at whatever port or place said Master with his vessel and cargo may arrive; that they would please to receive him, the said Master with goodness, afford him all such aid and assistance as he may need, and to treat him in a becoming manner, permitting him upon paying expenses in passing and repassing, to pass, navigate and frequent the ports, passes and territories, wherever he may be, to the end that he may transact his business, where and in what manner he shall judge proper. He keeping, and causing to be kept by his crew on board, the Marine Ordinances and Regulations of the place where he is trading.

Given under my hand, and the Seal of the Commonwealth of Massachusetts, the twenty-second day of January, A. D., 1787, and in the eleventh year of the Independence of the United States of America.

JAMES BOWDOIN.

By his Excellency's command.

JOHN AVERY, Jun., Secretary.

At this time the Custom House and the Light Houses were controlled by the State, as the following copy of a document will show :

COMMONWEALTH OF MASSACHUSETTS, }
 Naval Office, Port of Salem, Jan. 23, 1787. }

Received of John Tucker, Master of the Bark Light Horse, burthen two hundred and forty tons, the sum of forty shillings and sixpence, being the amount of the duty on said Bark, required by a law of this Commonwealth for the support and maintenance of Light Houses on the sea coast thereof.

JOS. HILLER,
 Naval Officer.

The Bark "Light Horse" set sail, on the 27th of Jan. 1787. Her deck was loaded with lumber. Nine days out they encountered a heavy gale, and a "very boisterous sea," that carried away part of their deck load, dashed in her ports, and started a leak. The pumps were sufficient to keep the leak under control.

They were troubled with ice, and after a long passage of fifteen weeks, arrived at the Cape of Good Hope. The Captain wrote his first letter from Table Bay, dated May 15, 1787, giving a circumstantial account of his passage, and of the sale of a portion of his cargo. From the Cape of Good Hope, they sailed for the Isle of France, where they arrived after a passage of thirty days. Here the cargo was sold, and the products of this sale used to purchase a return lading. Mr. Derby, soon after the "Light Horse," had sent out the Bark "Three Sisters," Ichabod Nichols, Master, with a cargo valued at £4129, 7s. 1d. On arriving at the Isle of France, both her cargo and the vessel herself were sold, the latter for \$6,000. The money thus procured was also used to obtain a complete return lading for the "Light Horse." The cargo procured consisted principally of bourbon coffee, but also comprised India goods, such as bags, cotton, pepper, salt-petre, china-ware, bandanna handkerchiefs, calico, cotton handkerchiefs, cotton goods, etc.

The passage home was safely, but laboriously made. On arriving off our coast by reason of severe weather, and much ice, they were forced to put into Portsmouth. Here the illness of Capt. Tucker was so great that Capt. Nichols of the "Three Sisters," who had returned with them, brought the vessel from Portsmouth to Salem. Arriving Jan. 27, 1787, just one year from the time of their departure.

The voyage proved fatal to Capt. John Tucker, who

contracted the climate fever at the Isle of France and died from its effects, March 31st, 1787, two months after his return.

Other vessels soon followed in the track of the "Light Horse." From the original papers in the hands of Mr. Tucker, it is found that no less than eight vessels from Salem, had doubled the Cape of Good Hope, between Jan. 1787 and 1789, and were the van of the squadrons which have followed since to the remotest East.

In these days of large ships it may seem that these vessels were of very moderate tonnage. They ranged only from 140 to 300 tons burthen. A second "Gränd Turk," built by Mr. Derby a few years later, called the *Great Ship*, did not exceed 500 tons burthen. Thus regarded, these adventures seem small. On the other hand, if we estimate these early voyages by the faith, ability and energy required, at that time, for their projection and successful execution, they must rank with the most notable enterprises of the present day.



NICARAGUA.

Nicaragua, although offering a rich field to naturalists, long remained comparatively unexplored.

This work is now being prosecuted very faithfully and successfully by Mr. J. A. Mc Niel, under the auspices of the Peabody Academy of Science. He is an indefatigable collector of objects of Natural History and Archæology, and a close observer of the habits and customs of the people.

Leaving Salem in May, 1868, he spent several months among the Nicaraguans, and returned in the following November, bringing back an extensive collection.

At a recent meeting of the Essex Institute, just previous to entering again upon his explorations, Mr. McNiel, in a brief address, gave an entertaining account of what he had seen, substantially as follows :

It is easy to reach and to travel in Nicaragua, but it is a very unpleasant country to live in. This is owing to the absence of the most ordinary comforts of civilized life, and the uncleanly habits of the natives. The people are strikingly peculiar. They lack less an aptitude, than an inclination to learn. They show but little ambition or foresight: A full meal of "tortilla" (or little cakes of corn) produces perfect content, and indifference to the future.

Their process for preparing corn to be made into cakes, is especially interesting, explaining, as it does, the former use of certain Indian implements found in New England. The corn is parboiled in a solution of wood ashes until its cuticle can be removed by rubbing. Its hull is then rubbed off, whereupon the kernel, softened and hulled, is placed upon a flat stone to be mashed. To do this they use a long, irregularly cylindrical stone, somewhat tapering at the ends, and somewhat flattened upon one side by the attrition produced in the mashing process. They hold this masher by the ends, and by half rolling, half rubbing, and at the same time compressing the corn, they reduce it to a fine pulp. This pulp they mould with their hands into small cakes, to be baked on pans over ovens made in the earth.

Recently a severe storm washed away a portion of the coast of Punta Icaca, in Rialejo Bay, and brought to light a nearly flat stone, with three legs and with a knob at one end shaped to resemble the head of a tortoise. With the stone pan was a stone masher, like those now used; similar to those which have been found often

in our vicinity and generally regarded as stone pestles. The place where these implements were discovered has not been inhabited within the recollection of the present generation. These relics* are therefore undoubtedly quite ancient, and are valuable as furnishing an explanation of some of the relics of the aborigines of North America, as already alluded to.

Some coarse but strong and durable fabrics, made from vegetable fibre, and some elegant carvings upon hard-shells, of some kind of fruit, show that this people have considerable ingenuity, but they lack the disposition to rise by it above a certain level. A few Americans and other foreigners have taken up their residence in Nicaragua. They have carried with them the customs of civilization; but the natives show great aversion to adopting any improvements suggested, however obvious the advantage to be gained, or however easy it may be made for them to change to better methods. To illustrate this Mr. McNeil told the following story :

Some American residents wishing to greatly please some friendly Nicaraguans living near by, procured from New York at great expense, as a present for them, a cooking stove of the most approved model. It was thought that this would be welcomed as a marvellous improvement upon the little fire of sticks, by which the Nicaraguans did all their cooking. The present was received with expressions of much pleasure, and forthwith tested. The first experience was repellant. Smoke poured forth from every seam, the fire smouldered, and the kettles refused to heat. But this difficulty was obviated when at the suggestion of their more experienced American friends, they transferred the fire from the oven to its proper place. For a time they used the new cook-

*They are now deposited in the cabinets of the Peabody Academy.

ing apparatus, but gradually neglected it, soon rejected it as an inconvenient and useless thing, and returned to their fire of sticks.

Their religion appears to be a mixture of Roman Catholicism and Sun worship, yet the true character of their faith must be determined by giving to it a closer study. One of their curious religious customs is a system of proxy, by which the women do religious service for the men, and the priests for the women.

We hope that before many months, when Mr. McNeil shall have returned again, he may enable us to communicate a more extended account of this country, its people, and its productions.



COL. LESLIES' EXPEDITION.

CANNON IN 1775, ON THE NORTH BRIDGE WHARF.

The laughable defeat of Col. Leslie with the sixty-fourth British Regiment, at the North Bridge, on Sunday, Feb. 26, 1775, has been made to appear still more ridiculous, and quite Quixotic from information furnished by Mr. Gideon Tucker, and communicated by his nephew, Mr. Jonathan Tucker, both of Salem. Mr. Gideon Tucker died in 1861, aged eighty-three years, but previous to his death made a written statement, from which it appears that these cannon were not public military stores, but private property, owned by various persons, and had been stored upon the wharf as useless in a time of general peace.

The following is his statement :

“Being with my father at his wharf in North Salem, when I was six or seven years old, then in 1784 or thereabouts, from which wharf privateers were fitted out in the Revolution, and where prizes were

landed, he pointed out to me where the cannon were piled, in front of the old store, upon the wharf, that was recently burnt.

These cannon had been accumulating for some time. They were owned by various persons; had been in use on board merchant vessels, and landed from them; a general peace making them then unnecessary.

When the alarm came that Leslie was marching that way to seize them, they were dragged away by the farmers, in a general turnout, suspended under their ox-cart axles, and under the direction of Col. Mason, of the Salem Militia, were landed on the upper part of his land, now the head of School Street. From him Mason street has its name.

A written memorandum from Gideon Tucker is here copied, dated September, 1858. "While Col. Leslie was detained by the raising of the draw of the bridge, the cannon were removed to Mason's field, where Geo. H. Devereux's house now stands, and there I saw them several years. I judge, from the best of my recollection, the number might have been twelve or fifteen. They remained there several years, up to 1793, or longer, and then gradually disappeared.

In the trouble with France at that time merchant vessels sailed with armament, and with Letters of Marque, and these cannon were taken for that purpose. None of them were used in the war of the Revolution. The place where they lay was a thicket of bushes and trees, and with boys, I have often played over and about them, until they were removed."

Our venerable citizen, Ebenezer Symonds, now living, testifies to having seen them there in his very youthful days.

ON GUANO DEPOSITS.

Prof. A. M. Edwards, of New York, made some remarks calling attention to a course of investigation he had been pursuing for several years, by means of which he had become acquainted with many facts of extreme importance in several branches of science, more particularly Geology, Agriculture and Chemistry. After having spent some years in the examination of Guanos, both chemically and by means of the microscope, he had turned his attention to the so-called, "Infusorial deposits" which are found to occur in various parts of the world, but more particularly on the Pacific shores of the North American continent, and in Japan and Peru. After becoming connected with the State Geological Survey of California, carried on under the direction and control of Prof. J. D. Whitney, he had been enabled to extend his field of research considerably, on account of being entrusted with the examination of the specimens collected during its prosecution. A full

consideration of this subject will appear in some future volume of the Survey Report, therefore the present notice is merely intended to call the attention of scientific observers to the matter and to solicit aid in its farther prosecution.

Among the specimens thus examined, are some of the rocks or shales, making up the great mass of the mountains of the Coast Range, which extend down the Pacific shore, from Washington Territory to the borders of Lower California. These shales are of a light cream color, for the most part, and are mainly made up of the siliceous remains of Diatomaceæ and Polycistina; the first being minute plants, and the last animals. Many of these are identical with those found living at the present time in the waters of that coast. Exuding through, and invariably present with these shales, is the Petroleum or Bitumen of California, from which fact they had been named by the Survey, "Bitumenous shales." Off this coast, and lying generally parallel to it, are several islands generally bearing upon their summits layers of guano of more or less value commercially. This coast, it must be noted, is in continual motion from the contiguousness of volcanoes of greater or less activity, which are found in the Sierra Nevadas and their spurs; so much so that it is slowly rising. The Survey have identified at least three ancient lines of rise or coast, and another one is seen in the islands which represent the peaks of a future Coast Range.

If the facts which accompany the occurrence of the marine Infusorial deposits of other parts of the globe, be examined, they are found to be the same as occur in California; that is to say, there is found Bitumen of some kind, and adjacent thereto islands upon which guano exists. Thus at Payta, in Peru, Dr. C. F. Winslow had found an Infusorial deposit almost identical with the Californian one; near by was Bitumen, and off the coast the well known Guano islands of Galapagos, Chincha, Lobos and others. The rocks of the Chincha Islands, which immediately underlie the guano, had been shown to be volcanic, and in fact, of recent eruption. So again, at Netanai in Japan, Mr. Raphael Pumpelly had found a marine Infusorial deposit of the same character, Bitumen and active volcanoes. In the northern part of Africa, in Algeria, the same phenomena occur, and in the Carribean sea are found the Infusorial deposits of the islands of Trinidad and Barbadoes, the great Pitch-lake of the first and the Bitumenous springs of the last island, while guano islands are common, and active volcanoes not uncommon.

From these facts as well as others of no less importance, derived from the chemical and microscopical characters developed, he had come to the conclusion that guano was not the result of the accumulation of bird droppings upon the islands, but the deposit of the remains

of dead animal and vegetable matter at the bottom of the ocean, which, as the coast rose, had been so lifted as to appear upon the crests of the islands formed, and from the chemical change which it had undergone during its submergence, and thereafter, had become the substance known as guano. If, however, such a collection of organic remains were acted upon by pressure and heat derived from volcanic sources at the time of, or previous to, its upheaval, the result would be a removal of most of the organic material, and its conversion into Hydro-carbons, such as are found in the Bitumen, while the inorganic portions would remain agglomerated together in the form of a more or less porous shale, mainly made up of the siliceous lorica of such organisms as were common in the waters of the sea in which it was formed.

He pointed out the fact, that the valuable deposits of guano which are found upon the Pacific coast of South America, are rapidly disappearing, and before very long it will become necessary to look in a new direction for a supply of this now indispensable material. He was convinced that the sea-bottom would hereafter be the storehouse from which such a want will be supplied. He had, in this connection, been greatly pleased to meet with one account, written by a gentleman who had spent some time at the Chinch Islands, connected with the guano trade, and who had a record of an island which had risen from the bottom of the sea in that locality, during one of the volcanic disturbances so common there, upon the summit of which was found guano. He also called attention to the fact, that although it served very well the purposes of a fertilizer, yet the accumulation of recent bird droppings of that coast, as well as of our own and of the European, is not guano, and in South America is not known under the same name, but has a peculiar appellation applied to it by the inhabitants.

It was his intention to follow up these investigations as fully as lay in his power, and he called upon scientific observers and collectors, to assist him by means of specimens of guanoses, sea-bottoms, algæ, anchor muds, and similar material, as the vast scientific and commercial importance of the subject warranted him, he considered, in so doing.



GEORGE W. FAHNESTOCK.

Our acquaintance with Mr. F. commenced last summer, when he spent a day in Salem, visiting the several objects of interest. His pleasing manners, gentlemanly address, and deep interest in institutions for general culture, made a very favorable impression, and resulted in a very pleasant and profitable correspondence and inter-

change. At that time speaking of his collection of pamphlets, he remarked that he did not know for what purpose he was making this collection, but presumed that it would ultimately be placed in some public institution. Little did he know how soon an awful catastrophe awaited him. He was a passenger on board the steamboat *United States*, bound from Cincinnati to Louisville, when she collided with the steamboat *America*, near the hour of midnight, on the 4th of December, 1868, about midway between the two above named places, and was among the victims of that terrible disaster.

Mr. F., son of B. A. Fahnestock, was born in Chambersburg, Franklin county, Pa., in the year 1823; and received a liberal education at Washington College, Pa. After graduation he continued his studies, and in early youth acquired a knowledge of many branches of Natural Science, particularly of mineralogy and botany. Notwithstanding his connection with a very extensive drug business in Philadelphia, he continued his studies with unabated zeal and great success. While possessing a deservedly high reputation as a successful man of business, he acquired a still wider reputation as a devotee to the natural sciences, and an antiquarian.

His collection of rare old books and pamphlets was very large and valuable. He seemed to take pleasure in exciting an interest in similar pursuits in the minds of others, and in aiding them. Especially did he do this for the various historical societies of the country. With many of the latter he was brought into connection through his gifts or exchanges. The friends which he made in this way will learn of his melancholy end with deep regret. To the Pennsylvania Historical Society he bequeathed all his present collection of pamphlets, numbering some 70,000. Many of these are very rare and will be of great value in throwing light upon obscure matters of history.

He was a sincere, humble and modest christian, and was attached to the Presbyterian church. He was in full sympathy with the benevolent enterprises of the day, and sustained them liberally with his means. He was blessed with wealth, and his great desire was to use his means in doing good. Without doubt, if his life had been spared, he would have continued steadfast in this purpose, and employed his large fortune, present and prospective, in promoting the glory of God on earth.

The death of such a man must—cut off as he was in the meridian of life—be regarded as a loss to the community and to the church. He has, however, embalmed his memory in the hearts of a wide circle of friends, and shed a lustre upon his name that will not soon fade away.

For many of the facts contained in this notice, we are indebted to an article in the *Reformed Church Messenger* for Wednesday, December 23, 1868.

JOHN CASSIN.*

During the past three years American Ornithology has lost from its ranks, three of its most distinguished patrons and votaries, who have died in the very prime of their lives, and in the midst of their active usefulness. Thomas B. Wilson, M. D., of Philadelphia, whose munificence not only enriched the Museum of the Academy with the renowned Massen collection of birds, but added to it by constant contributions, until it became the largest in the world, and accompanied these princely gifts by one even more valuable, the most perfect ornithological library anywhere to be found. Henry Bryant, M. D., of Boston, to whom the Natural History Society of that city is indebted for an ornithological collection only second in numbers to that of Philadelphia, an active, enthusiastic student alike in the closet and the field; and now John Cassin, of Philadelphia, who, more than any other writer during the last quarter of a century has contributed, by his investigations and his publications, to advance and increase our knowledge, both of American and Foreign Ornithology. He died in Philadelphia on the 10th of January, aged fifty-six years and four months.

Mr. Cassin was born in Chester, Pa., in 1813, and became a citizen of Philadelphia in 1834. During the thirty-four years he has resided in that city, he has been an active member of the Academy of Natural Science, and no one has been more constant or more fruitful, both in his studies and in his contributions to his favorite science. Besides some sixty papers published in the *Journal*, or in the *Proceedings* of that Society, all of them of first-class importance, he has, from time to time, given to the world more elaborate publications. In 1856 he published an octavo volume, giving illustrations and descriptions of fifty species of birds unknown to Audubon. The ornithology of Wilkes' expedition was committed, for revision, to Mr. Cassin's charge, and by him published in a most creditable manner. The ornithology of the expedition to Japan, the ornithology of Lieut. Gilliss' expedition to Chili, and the *rapaces* and *grallatores* in the ornithology of the Pacific Railroad Explorations were also written by Mr. Cassin.

In 1846, about twelve years after his first residence in Philadelphia, Dr. Wilson commenced his noble contributions to the Museum and to the library of the Academy of that city. The result, "was a collection of twenty-five thousand specimens of birds, and a library containing," says Mr. Cassin, "very nearly every book relating to this branch of natural science." With such unequalled opportunities, a man of Mr. Cassin's rare application, devotion and zeal, could not but become a complete master of his science. No one on this continent

* Communicated by Thomas M. Brewer, M. D., of Boston.

equalled him in his familiarity with the old world forms, and his death leaves our country with no one to fill the void thus created in this field.

In American ornithology, in the forms of southern, central and insular America, Prof. Baird of Washington, and Mr. George N. Lawrence of New York, were Mr. Cassin's co-laborers, and those fields are still ably represented. With the types of the other hemisphere Mr. Cassin was as familiar as with those of our own, and he has contributed largely to their elucidation and description.

In the death of Mr. Cassin, the world of Science sustains a double loss, not only that of the gifted naturalist, but also the appreciative and intelligent head of an important engraving establishment, where scientific publications found in him invaluable assistance.

In the private relations of life he was upright, cordial and sincere, firm in his friendship, kind and courteous in his dealings, and the open and avowed opponent of all that was base or unjust. He never shrank from the avowal of his opinions, or from maintaining them when assailed, yet never engaged in personal controversy.

It was the desire of his heart that "Naturalists of all climes should work out their mission in harmony and fellowship," and to no one more than Mr. Cassin himself, belongs the high encomium he bestowed upon Gustav Hartlaub of Bremen, "would that all like him cultivated and understood, as well as science, kindness, friendship and justice."



ORDER OF MEETINGS.

Regular meeting held January 4th, the President in the chair.

Records read. Donations to the Cabinets and the Library announced.

Communications presented by Mr. Jonathan Tucker, concerning early voyages beyond the Cape of Good Hope, vide page 3. Also concerning the Cannon at the North Bridge, Salem, 1775, vide page 10.

Narrative by James A. McNiel, of life and experiences in Nicaragua, vide page 7. Candidates for election as Corresponding Members, were announced.

Regular meeting held January 18th, the President in the chair.

Records read and correspondence announced. Donations to the Cabinets and the Library announced.

The President announced the death of George W. Fahnestock, vide page 13. Also the death of John Cassin, vide page 15. F. W. Putnam eulogized Mr. Cassin.

The President read a paper on the Union Building, in Salem, vide next number.

F. W. Putnam exhibited and described a living Pisuti.

Mr. Putnam also exhibited and explained two specimens of Indian Carving, vide next number.

Professor A. M. Edwards of New York, spoke concerning the connection of Guano deposits with Infusorial shales, and Bitumen, vide page 11.

The thanks of the Institute were voted to Mr. Edwards for his address.

Thomas Spencer of England, Ferdinand J. Dreer of Philadelphia, I. P. Langworth of Chelsea, J. J. Howard of London, and James A. McNiell of Grand Rapids, Mich., were elected Corresponding Members. Candidates for election as Resident Members, were announced.

LETTERS ANNOUNCED.

Batchelder, Jacob, Lynn, Jan. 8; Boardman, Samuel L., Augusta, Me., Nov. 30; Brigham, W. T., Boston, Dec. 18; Chipman, Rev. R. M., East Granby, Conn, Dec. 15; Cobb, W. H., Wellsboro, Tioga Co., Pa., Dec. 16; Dix, D. L., Washington, D. C., June 10; Dumas, V., Boston, Dec. 21; Eaton, Lilley, Wakefield, Dec. 29; Geer, Elihu, Hartford, Conn., Dec. 31; Goodell, A. C., jr., Salem, Jan. 6; Gould, B. A., Cambridge, Dec. 16; Howard, J. J., Dartmouth Row, Blackheath, Kent, England, Dec. 11; Hubbard, Sara A., Kalamazoo, Mich., Sept. 21; Jackson, Rev. S. C., Boston, Dec. 30, and Jan. 4; Johnson, W. C., Newburyport, Dec. 24; Kinrock, Gustavus, Iowa City, Dec 25; Lacklau, R. M., London, England, March 3; Lincecum, Geo. W., Long Point, Dec. 14; Lyman, Arthur T., Boston, Jan. 12; McAlister, John A., Philadelphia, Jan. 2; Naturborschendè Gesellschaft, Frieberg, March 3; Norton, Edward, Farmington, Sept. 4; Porter, Horace P., Wayland, Allegan County, Mich., Dec. 31; Riley, Charles V., St. Louis, Mo., Dec. 21; Robinson, Ernest, New Haven, Dec. 31; Royal Institution, London, Nov. 29; Société Royale des Sciences, a Upsal, Sept. 15; Spofford, Jeremiah, Groveland, Dec. 22; Tomkin, John, New York, Dec. 21; Turnbull, W. P., Philadelphia, Jan. 5; Verrill, A. E., New Haven, Conn., Nov. 18, and Dec. 20; Watt, David A. P., Montreal, May 4; Yeomans, W. H. Columbia, Conn., Jan. 1.

ADDITIONS TO THE LIBRARY.

BY DONATION.

AGASSIZ, L., Cambridge. Contributions to the Fauna of the Gulf Stream at great depths, 8vo, pamphlet.

BATCHELDER, JACOB, Lynn. Lynn Directory for 1863, 1 vol. 12mo; ditto for 1865, 1 vol. 8vo. Catalogue of Lynn Free Public Library, 1 vol. 8vo.

BROOKS, CHARLES T., Newport, R. I. Carriers Addresses, Newport, 1869.

BUTLER, B. F., M. C. Speech in U. S. Congress on National Currency, Jan. 1869, 8vo, pamphlet.

CHASE, THOMAS, Haverford College. Catalogue of officers and students for 1868-9, 12mo pamphlet.

COLE, Mrs. N. D. Files of Salem Gazette for 1868, 1 vol. folio.

EATON, LILLEY of Wakefield. Inaugural exercises at Wakefield, on the occasion of the assumption of the new name, July 4, 1868, 8vo, pamphlet.

GREEN, SAMUEL A., Boston. 48 Pamphlets.

HOLDEN, N. J. Various papers and pamphlets relating to the campaign of 1868

HOOD, MARY W. Massachusetts Gazette for Dec. 26, 1786.

HOUGH, FRANKLIN B., of Lowville, N. Y. Biographical notice of Dr. C. M. Crandall, 8vo, pamph., Albany, 1868.

LANGWORTHY, Rev. I. P., of Chelsea. Walton's Vermont Register, 1852. Minutes of Fifty-ninth Annual Meeting of General Association of New Hampshire, 8vo, pamphlet. Minutes of Sixty-sixth Annual Meeting of General Association of Congregational Church, of Mass., 8vo, pamphlet.

LEE, JOHN C. Commercial Bulletin for December, 1868.

LOW, N. J. Boston Post, from July 1868, to January 1869, 1 vol. folio.

MILLS, Rev. R. C. Minutes of the Salem Baptist Association; 12 numbers.

PERLEY, JONATHAN. By-Laws of Starr King Lodge of A., F. and A. Masons, 12mo, pamph., Salem, 1868.

POPE, HENRY E. Second Annual Report of Crown Hill Cemetery, 8vo, pamph., Indianapolis, 1866. Also several papers.

ROBBINS, Rev. C., Boston. Correspondence relating to the Invention of the Jacquard Brussels Carpet Power Loom, 8vo, pamph., Boston, 1868.

ROBERTS, DAVID. Boston Directory, for 1863, 1 vol., 8vo.

ROBINSON, E. P., Saugus. Abstract of Census of Mass., 1 vol. 8vo, Boston, 1867. Twenty-third, Twenty-fourth, and Twenty-fifth Registration Reports of Massachusetts, 3 vols. 8vo, Boston, 1866, 1867 and 1868.

ROPES, WILLIAM L., Andover, Mass. Catalogue of Andover Theological Seminary, 1868-9, 8vo, pamphlet.

SILSBEE, NATHANIEL, Boston. Harvard College, Treasurer's statement, 1868, 8vo, pamphlet.

STICKNEY, M. A. Saco and Biddeford Directory, for 1849, 12mo, pamphlet. Newburyport Directory for 1849, 12mo, pamphlet. Portsmouth Directory for 1851, 1 vol. 16mo.

SUMNER, CHARLES, U. S. Senator. Sherman's Speech in U. S. Senate, Jan. 6, 1869, 8vo, pamphlet.

THAYER, Rev. C. T., Boston. Address at dedication of Lancaster Memorial Hall, Jan., 1868, 8vo, pamphlet.

UPHAM, CHARLES W. Year Book and Almanac of Canada for 1869, 8vo, pamph.

U. S. CONG. LIBRARY. Librarian's Annual Report for 1868, 8vo, pamph.

U. S. TREASURY DEPARTMENT. Report of the Secretary of Treasury on the state of the Finances, 1867 and 1868, 2 vols. 8vo.

WATERS, J. LINTON, Chicago, Ill. Directories of Chicago for 1862, 1864, 1865, 1865-6, 1864-5, 1867, 6 vols. 8vo. Thirteenth and fourteenth Reports of Schools of Chicago. Elliot's Western Fruit Book, 1 vol. 12mo, New York, 1869. Adjutant General's Annual Report of Illinois, 1863, 1 vol. 8vo. 33 Pamphlets.

WEST, W. S. Eight miscellaneous pamphlets.

BY EXCHANGE.

BOSTON PUBLIC LIBRARY. Bulletin for Nov., 1868. Sixteenth Annual Report of Trustees, 8vo, pamph., Boston, 1868.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, vol. XII, sigs. 11 and 12.

CALIFORNIA ACADEMY OF SCIENCE. Memoirs, vol. 1. pt. 2d, 4to, pamphlet.

KONGLIGA VETENSKAPS—SOCIETETEN, UPSALA. Nova acta Regiae Societatis, Scientiarum Upsaliensis, ser. ter., vol. VI, Fasc 1, 11, 1866, 1868, 4to.

LANCASHIRE AND CHESHIRE HISTORIC SOCIETY. Address to the members of, by J. Mayer, F. S. A., 8vo, pamph., Liverpool, 1868.

MARYLAND HISTORICAL SOCIETY. Twenty-four numbers of its publications.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. New England Historical and Genealogical Register for January, 1869. Address of Hon. M. P. Wilder at Annual Meeting, Jan. 6, 1869, 8vo, pamphlet.

NEW JERSEY HISTORICAL SOCIETY. Proceedings, 2d ser., vol. 1, No. 2, 1868, 8vo pamphlet.

PUBLISHERS. American Literary Gazette, Dec. 15, Jan. 1. American Entomologist, Jan. —. Canadian Journal, Dec. —. Christian World Jan. —. Essex Banner, Dec. 25, Jan. 1, 8, 15. Gardener's Monthly, Jan. —. Gloucester Telegraph, Dec. 23, 25, 30; Jan. 2, 6, 9, 13. Haverhill Gazette, Dec. 25; Jan. 1, 8, 15. Land and Water, Nov. 7, 14, 21. Lawrence American, Dec. 25; Jan. 1, 8, 15. Lynn Reporter, Dec. 23, 26, 30; Jan. 2, 6, 9, 13, 16. Medical and Surgical Reporter, Dec. 19, 26; Jan. 2, 9. Naturalist's Note Book, Dec. —. Peabody Press, Dec. 23, 30; Jan. 6, 13. Silliman's Journal of Science, Jan. —. Trübner's American and Oriental Literary Record. Vermont Historical Gazetteer. Bibliotheque Universelle et Revue Suisse, Archives des Sciences, Physiques et Naturelles, Tome XXXIII, Oct. and Nov., 1868, 8vo.



ADDITIONS TO THE MUSEUMS OF THE INSTITUTE AND THE PEABODY ACADEMY OF SCIENCE.

JONATHAN TUCKER, Salem. Two Cases of Chinese Insects.

Prof. A. E. VERRILL, Yale College, New Haven, Conn. Sagitta sp., from Eastport.

SMITHSONIAN INSTITUTION, Washington, D. C. A collection of thirty-three packages of Infusorial earths from various localities.

EZRA L. WOODBURY, Salem. A specimen of "Common Brown Bat," taken in Salem.

Col. A. HARATZTHY, Corinto, Nicaragua. A pair of elaborately carved, ancient wooden Stirrups, from Corinto.

Don. J. J. and Capt. F. B. DeShon, Polvon. An ancient "Rapier," bearing the stamp of the maker, Lisbon, 1621.

Capt. A. T. DOUGLASS. A living specimen of the "Pisuti," or Coati, from Central America.

Capt. GEO. F. EMMONS, Sloop of War Ossipee, U. S. N. Specimen of Gorgonia, from Punta Arenas, Gulf of Nicoya.

JAMES L. WARD, Salem. A specimen of Loon (*Colymbus torquatus*) and one of Guillemot (*Lomvia Svarbag*, Coues), from the vicinity of Salem.

Dr. T. GARLICK, Cleveland, Ohio. Antlers of the Caribou, from twenty miles north of Sault St. Marie, Lake Superior.

Prof. H. W. RAVENELL, Aiken, S. C. A collection of 194 species of Fungi, from South Carolina.

E. BICKNELL, Salem. Specimens of Garnet, from Ragged Island, Casco Bay.

WILLIAM STONE, Ipswich. An Indian Pestle, found near Eagle Hill, Ipswich.

G. E. EMERY. An Indian Idol, or Medicine, found in an excavation during the grading of the Northern Railroad of New Hampshire, about twenty years ago in North Boscawen, Merrimack County, on territory occupied by the Pennacook Indians. Also Green Jasper and Asbestos, from Lynn, and Insects and portion of the backbone of a Skate.



DEFICIENCIES IN THE LIBRARY.

It is intended to publish from time to time, lists of deficiencies in the library; hoping that those friends of the Institute who may notice the same, will be induced to aid in completing the sets. Any number or volume, not designated (within brackets) under any title, will be acceptable.

DEFICIENCIES IN ALMANACS.

- THE CLERGYMAN'S ALMANAC, Boston [1809-1822].
 UNITARIAN REGISTER, Boston [1846-1858].
 UNITARIAN CONGREGATIONAL YEAR BOOK [1856-1858, 1867].
 ALMANAC AND BAPTIST REGISTER, Philadelphia [1841-1852].
 AMERICAN BAPTIST ALMANAC, Philadelphia [1860].
 THOMAS (R. B.) FARMER'S ALMANAC, Boston [1793-1863].
 METHODIST ALMANAC, New York [1858, 1860, 1861].
 GEORGE'S (DANIEL) CAMBRIDGE ALMANAC or ESSEX CALENDAR, Salem and Newburyport [1776, 1778-1781, 1783, 1784].
 RUSSELL'S (E.) AMERICAN ALMANAC, Danvers and Boston [1780-1782].
 CARLTON'S (OSGOOD) ALMANAC, Boston [1790-1797].
 BICKERSTAFF'S BOSTON ALMANAC [1768, 1769, 1773-1775, 1777-1779, 1784-1788, 1791, 1792, 1795].
 WEBSTER'S CALENDAR, or THE ALBANY ALMANAC [1829, 1832, 1847-1866, 1868].
 NEW ENGLAND FARMER'S ALMANAC, by Dudley Leavitt, Exeter and Concord, N. H. [1819-1821, 1823, 1826-1827, 1830-1867].
 UNIVERSALIST'S REGISTER, COMPANION and ALMANAC, Utica, N. Y., Boston, [1839-1842, 1849, 1852, 1855, 1857-1866].
 WHIG ALMANAC, New York [1844-1853, 1855].
 TRIBUNE ALMANAC, New York [1857, 1859-1866].
 LOW'S (NATHANIEL) ALMANAC, Boston [1770, 1772-1821, 1824, 1825, 1827].
 CHURCHMAN'S ALMANAC, New York [1830, 1834, 1837].
 THE CHURCH ALMANAC, New York [1841, 1843, 1846, 1848-1862, 1864, 1866, 1867].
 THE PROTESTANT EPISCOPAL ALMANAC, New York [1860, 1862, 1863, 1864].
 SWORD'S POCKET ALMANAC, New York [1831, 1839].
 THOMAS' (ISAIAH) ALMANAC, Worcester [1788-1791, 1793, 1796-1808, 1811-1816, 1818-1822].
 SPOFFORD (THOMAS) ALMANAC, Haverhill, Exeter, Boston [1817-1824, 1826, 1829, 1831-1838, 1841, 1842, 1844, 1846].

DEFICIENCIES IN DIRECTORIES.

- LEWISTON AND AUBURN DIRECTORY, by Stanwood [1860, 1864].
 PORTLAND DIRECTORY, by S. Colman [1831]; A. Shirley, [1834]; REFERENCE BOOK AND DIRECTORY, by Becket [1846, 1847-8, 1850-1, 1852-3, 1856-7, 1858-9, 1863-4]; ALMANAC AND REGISTER, by C. A. Dockham [1860].
 SACO AND BIDDEFORD BUSINESS DIRECTORY [1849, 1856-7].
 CONCORD, N. H., DIRECTORY, by Hoag and Atwood, [1830]; D. Watson, [1856];
 DOVER, N. H. DIRECTORY, by Stevens [1833]; by J. S. Hayes [1859-60].
 MANCHESTER, N. H., ALMANAC AND GENERAL BUSINESS DIRECTORY [1850]; DIRECTORY [1854, 1858, 1860, 1864, 1866].
 NASHUA, N. H., DIRECTORY, by Greenough [1864-5].
 PORTSMOUTH, N. H., DIRECTORY, by Penhallow [1821]; by Brewster [1851]; by Greenough [1864].
 BURLINGTON, Vt. DIRECTORY, by Hart [1865-6, 1866-7, 1867-8].
 BOSTON, MASS., DIRECTORY, by John West [1796]; by E. Cotton [1805, 1807, 1810, 1813, 1816, 1818]; by Frost and Stimpson [1822, 1826, 1827]; by Hunt and Stimpson, [1828]; by Charles Stimpson, jr. [1829, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846]; by George Adams [1846-9, 1847-8, 1848-9, 1849-50, 1850-1, 1851-2, 1852-3, 1853-4, 1854, 1855, 1856, 1857]; by Adams, Sampson & Co. [1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1867].

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. I. SALEM, MASS., FEBRUARY, 1869. No. 2.
One Dollar a Year in Advance. 10 Cents a Single Copy.

INDIAN RELICS.

Mr. F. W. Putnam exhibited two rare specimens* of Indian carving, both wrought from steatite. The largest is about two inches, and the smaller about three-fourths of an inch in length. One was found in an excavation made about twenty years ago, during the grading of the N. R. R. of N. H., in North Boscawen, Merrimack County, on territory occupied by the Pentacooks. It was presented to the Museum of the Peabody Academy of Science, by Mr. G. E. Emery of Lynn. The other was found in Cayuga and has long been in the possession of the Institute, and was presented by Mr. C. L. Allen. It is a simple mask of soapstone, with holes bored through its edge to permit its being attached to a string. Both have decided Indian features, perhaps more noticeable in the smaller specimen. Similar carvings, wherever found, have been almost invariably cut from the same material. They are supposed to be Indian idols or "Medicine."

In this connection the following statement, transcribed

* At the Institute meeting, Jan. 18th.

from a Kansas paper published some months ago, and sent by Mr. Emery, is interesting.

"About the 10th of July the Kiowas had a battle with the Utes, in which the Chief, Heap-of-Bears, and seven other Kiowa braves were killed. Heap-of-Bears had on his person the Medicine of the Kiowas, which was captured by the Utes, who still retain it. This Medicine consists of an image about eighteen inches in length, carved to represent a human face, and covered with the down and feathers of the Eagle and other birds, and swathed in wrappers of different materials of value. Although I have been conversant with Indian habits and customs for a long time, I was surprised to find the value these people attach to this Medicine. They begged and implored Col. Murphy to recover it for them, and promised to pay the Utes as many horses as they wanted, and also to make a permanent and lasting peace, not only with the Utes, but also to refrain from farther depredations on the Texas border, if this image should be restored. Col. Murphy promised to endeavor to recover it, but I think his success in the matter will be doubtful, as the Utes also attach great importance to their capture, believing that while they retain it, the Kiowas will be powerless to do them harm."



ESSEX INSTITUTE PRESS.

To facilitate the printing of the publications a stand of type was obtained and placed in the lower western ante-room of Plummer Hall. Mr. William S. West was employed in January, 1866, to devote the time to composition, not otherwise required in the care of the building—the presswork being done elsewhere. An enlargement of this plan soon became a great desideratum; more type was needed; also a press and other materials requisite for a printing office. These were obtained from funds contributed by a few friends, and hence was established the "Essex Institute Press," which, in the October following, commenced operations in the "Union Building," corner of Essex and Union streets, Salem. This building was erected and is now owned by

the "Salem Union Street Corporation," a brief account of which, with a few historical reminiscences, are contained in the following article.

In September, 1867, the Press was removed to the Central Building, on Central street, its present location. The associations that cluster around this locality are numerous, and a recital of them may, at some future time, be deemed of sufficient importance to be presented to the readers of the BULLETIN. The office is now fully equipped with type, and the various materials requisite in a first-class book printing establishment, with the exception of the Presses which are inadequate for the work required, consequently a portion of the presswork is done elsewhere. The great desideratum is a large Press and steam power to operate the same, and we trust that all friends of the institutions in this place, for the promotion of science and useful knowledge, will aid in the accomplishment of this result.

Great credit is due to Mr. John O'Donnell, the foreman, and to the compositors and pressmen in the office, for the fine appearance of everything that emanates therefrom, which will bear comparison with the work of similar establishments.

The following books are now being printed at the office :

The 6th vol. of the Proceedings and Communications of the Essex Institute, 8vo; the 10th vol. of the Historical Collections of the Essex Institute, 8vo; the 1st vol. of the Bulletin of the Essex Institute, 8vo (issued monthly); the 1st vol. of the Memoirs of the Peabody Academy of Science, large 8vo; the 3d vol. of the American Naturalist, 8vo (issued monthly); the Guide to the Study of Insects, by Dr. Packard, 8vo (issued in parts, six parts now out); the 1st Annual Report of the Peabody Academy of Science, 8vo; the 17th vol. of the Proceedings of the American Association for the Advancement of Science (Chicago Meeting); the Genealogy of the Stickney Family, by Matthew A. Stickney, 8vo; the Record of American Entomology for the year 1868, 12mo; Several other works are also in waiting.

UNION BUILDING.

A meeting of subscribers to the building to be erected on Union street, was held on Tuesday evening, May 31, 1808; votes were passed to purchase of Mr. John Watson, his land and buildings on the western side of Union street, for the sum of five thousand dollars, and also to apply to the Legislature for an Act of Incorporation. The act having passed the two branches of the Legislature, received the approval of the Governor, June 10, 1808. The meeting for accepting the Act and for organization was held June 17, 1808. The Act of Incorporation limited the number of shares to one hundred, and the capital to \$40,000.

The By-laws direct that the stock be divided into forty shares; that the annual meeting be held on the second Tuesday in June. The following officers were chosen:—

Directors,—Benjamin Pickman, *President*; Gamaliel Hodges, Samuel Archer, 3d, Thomas M. Woodbridge, Robert Stone, jr. *Clerk*,—John Moriarty. *Treasurer*,—James C. King.

Gamaliel Hodges, Thomas M. Woodbridge and W. B. Parker, were appointed the superintending committee of construction.

The Union Building at its erection, had two shops on Essex street and one on Union street, also three tenements for dwellings, on Union street. The eastern shop on Essex street was soon occupied by Thomas M. Vinson, for the sale of Dry Goods. Mr. V. came to Salem a few years previous and taught a school in the Vestry of the South Church, on Cambridge street. He entered the army in 1812; was Major of the 34th Regiment in 1813, and Lieutenant-Colonel in 1814, and when the army was reduced in 1815, received an honorable discharge. He then accepted an appointment in the Custom House, Boston, which he held many years. He was a respectable man and a good officer.

Goodhue & Warner, both from Ipswich, had a grocery in the southern shop, on Union street. They soon removed to Franklin Building. William Stearns occupied the eastern shop in the autumn of 1816, and for several subsequent years as a drug and grocery store. During his occupancy that and the southern store were united.

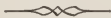
The Merchants Bank was instituted in 1811, and on the 29th of August of that year, leased the western store for their banking room, for a period of twenty years, and continued until the removal to Bowker's Building. The first officers were Benjamin W. Crowninshield, *President*; John Saunders, *Cashier*; John White Treadwell, *Principal Clerk*; Joseph Story, Joseph Winn, Jonathan Neal, James Devereux, Stephen White, John Dodge, jr., Joseph Ropes and Robert Stone, jr., *Directors*. The Essex and Salem, the only banks then in Salem, were under the control of the Federalists, and party spirit

interrupted business and social relations. The Republicans complained that they did not receive suitable accommodations at these two banks, and they accordingly obtained the charter of the Merchants, whose officers, and most if not all of its stockholders, were of the Republican party.

The site of this building was a part of the estate owned by the Elder John Browne, one of the early settlers. After his death it came into the possession of his son James, then his daughter Hannah, wife of William Pickering, then to her daughter Elizabeth, wife of Abraham Watson, then to her son John Watson, who in 1808, sold to the present owners. It was preoccupied by three buildings, two of which were very ancient. An old house in a very decayed condition was, on Essex street, tenanted by several families. In the rear was an old building which had been used for many years as a school-room, by Master John Watson, an eminent and successful teacher in his day, and a very worthy man. He was a son of Deacon Abraham and Elizabeth (Pickering) Watson, and he lived in the house on the eastern corner of Essex and Union streets. His mother was a daughter of Capt. William Pickering, who commanded the "Province Galley" for the protection of the fishermen from the depredations of the French in 1707. His father was from Cambridge, but came in early life to Salem. His wife was Abigail, daughter of Capt. John and Abigail (Blaney) White. She died August 19, 1806, aged 54. He died October 31, 1813, aged 67.

He was succeeded in the school by Master Pennel, an Englishman, who came here from Boston. His family occupied a tenement in the old house above mentioned. South of the school-house was a more modern wooden building, used by a Mr. Baker, from Ipswich, for the manufacture and sale of hats.

For many of the above facts we are indebted to the kindness of W. B. Parker, Esq., who is an officer of the corporation and the keeper of its records; and to Hon. B. F. Browne, who has done a good service in the preservation of materials for our local history, by his valuable contributions to the publications of the Essex Institute, and to the newspapers of this city.



A SKETCH OF THE LIFE OF THE LATE HORACE MANN.

BY A FRIEND AND ASSOCIATE.

Biographical sketches of our late departed friends sometimes sound like solemn mockeries. When in rising, ripening youth, a man of promise is cut down unexpectedly to the majority of his friends, the

mind refuses to accept as final, an end so un hoped for. It is hard to believe that the column starting from a broad base, and promising to tower into higher and purer regions, is suddenly snapped in mid air, leaving us only the incomplete shaft, an emblem at once of past greatness and of unrealized hopes.

We are too apt to take as the measure of a life, perfect in its details and symmetrical in its proportions, days instead of deeds; to regard lengthened existence as a substitute for a genuine, fruitful one.

A sketch of the character and labor of the late Horace Mann will suffice to show that the popular estimate is false, for here we see a man who in early life had developed a character of singular simplicity and purity, and who had distinguished himself in the contest between knowledge and ignorance. The departure of such men leaves a vague longing after something expected, yet undone. A deeper thought, however, convinces us that the loss is simply one of quantity, not quality; that years would have brought, as only years could bring, the fruition of all our hopes. Such lives show no failures. They only point to past success and conquests about to be entered upon.

In truth, then, —

“If we drop our tears,
Who loved him as few men were ever loved,
We mourn no blighted hope, nor broken plan
With him whose life stands rounded and approved
In the full growth and stature of a man.”

Horace, the eldest son of Horace and Mary Mann, was born in Boston, on the 25th of February, 1844. To him was denied the excessive vitality, so characteristic of boyish life, that leads its possessor into vigorous bodily exercise. For such sports he seemed to have but little relish. His nervous, sensitive temperament, inclined him rather to the more quiet enjoyment of intellectual life. Rude boys were too much for him, and he fled from their presence. Even at the earliest age, quiet, thoughtful boys older than himself, were his chosen companions. Some of the maladies incident to childhood affected him more seriously than they do most children, and intensified the morbid action of his nerves. Though very fond of his younger brothers, he once, when a child, wished that he could die, and when pressed for the reason, he at last unwillingly confessed that it was “because the boys made so much noise.” Ever after, suffering for a whole year from the effects of a cold taken during the mumps, a heavy footfall had been painful to him. This alarming sensitiveness, of course, enlisted the greatest sympathy, and every arrangement was made to defend him against the robust play of stronger children. He also resolved, very early in his childhood, when his sympathies even for

animals were too keen for comfort, never to care much for any one, for then he should not suffer. But that resolution was not easily kept, and he did love and consequently suffer. He made idols very early, and never quite lost the tendency to do so, but he never liked to hear another express the same disappointment he felt. The idols acquired a certain sacredness in his eyes from the very fact of the idealization.

His father, who was born with the same sensitiveness, frequently said of him that it would require all the prosperity the world could give to make it worth while for him to have been born. To one so constituted, the joy in the universe which made his happiness was the most fitting compensation. Perhaps to this weakness of body, we may in part attribute that all-absorbing interest in study, the final development of which, in after years, explained his rapid mental advance, and now entitles his name to a place on the list of our botanical celebrities. But his early education was not so much a lessening from books, as by handling the objects of nature and learning her laws from the lips of his father. He was not sent to school till he was twelve years old, with the exception of a few months when seven. He was then sent to the Model Department of the West Newton Normal School, because his natural love of order and routine made the home lessons harassing at a time when his mother's cares prevented the regularity of attention he craved.

The discipline of the school was excellent, neither too lax nor too stringent, and he was very happy in it for a time. The feature of it that interested him chiefly, was the daily lesson in Mineralogy, for this fed the taste already acquired for the study of nature—Conchology and Botany having been made interesting to him at home. His enthusiasm about the stones he collected was so great that a kind friend sent him a barrel of Russian minerals. Never did king feel so rich. They were examined, named and labelled in the childish handwriting and spelling, and carefully preserved all his life. A sandstone, from Ehren breitsstein, was labelled Ehren's Broad Stone, and this is a good sample of his method of learning by ideas rather than by words. He had not a good verbal memory, and could never get rote lessons, but he never forgot anything he learned by the aid of eyesight and ideas.

His father was clearly of the opinion that the study of nature is a better discipline for the mind than the study of heathen mythology, and it was a great gratification to the son, in after life, to find this very expression in his father's writings. To the boy no new item of knowledge or youthful discovery was satisfactory till he had "talked about it with papa." He would watch at the door of the study, for intervals of leisure from company and from literary labors, to seize the opportunity for these delightful talks. His father was also in the habit of taking his children to mills and factories, to show them

processes and machinery. Horace learnt very early a simple method of drawing from nature, by a system that did not involve scientific explanations, and when he was eight or nine years old, he would try to describe machines to his mother by drawing them. He afterwards showed a talent for drawing figures, and might have excelled in that accomplishment, if he could have found time from more absorbing occupations for it.

Early exercises and sports in geometry made him practically familiar with that branch of mathematics, which was always easy to him, and he was a good arithmetician and algebraist when quite young. His first lessons in geography were from that edition of Woodbridge's Atlas that has figures of animals and plants in their respective localities, and from an encyclopedic work on the subject, illustrated on every page with fine wood-cuts. He excelled in drawing maps, and from his habit of poring over pictures, and from oral instruction upon geography and history combined, the lines of maps were never unmeaning lines to him. He was particularly charmed with Gæthe's mountain, on which the vegetation of different latitudes is paralleled by different altitudes. When he became a botanist the geographical distribution of plants was very interesting to him, and he was always in the habit of reading with a map by his side.

When in Washington for two winters he enjoyed the freedom of the Patent Office, and became familiar with the objects obtained on Wilkes' Exploring Expedition, and also with Mr. Titian Peele's collection of the Fauna of the District of Columbia. The model machine rooms were also very attractive to him, and all that could be then seen of the Smithsonian Institution, at that time in its infancy.

His boyish desire for travel was to see the scenery of the world, rather than of man's achievements or their ruins, and he used to make himself quite unhappy with the fear that cultivation and railroads would go everywhere before he should be old enough to see his own country in all its wildness.

French was taught him in his childhood by living speech, and he studied both Latin and German by a colloquial, rather than by a grammatical method, when quite young, but his knowledge of those languages was not extensive. His philological powers, however, were well exercised by these early studies, so that he had a good command of his own language. He had no taste for the classics; there were too many interesting books to read, and things to do, to waste time upon them, as he thought. The love of nature, which dates back into his early childhood, from the time when he felt the quiet enjoyment of the new world, on the flowery banks of Concord river, sitting in his basket carriage, and the contemplative rambles of later life, in the same vicinity, leave on an observer the impression of a

child set apart to minister in the temple of nature. He registered his future vocation when in maturer years he said, "out of botany all to me is blank." With more propriety he might have said, out of *nature* all to me is blank. Exclusive attention to one branch of natural science was out of the question. His broad, catholic tendencies could tolerate no such divorce of one kingdom from another. Unconsciously to himself, the unity in all was a potent element in leading him to devote himself to science. The harmony everywhere evinced was suited to a nature so thoughtful as his. The passionate ardor with which he pursued this idea, thereby becoming acquainted with the divine plan, lightened to him many labors of details involved in his mode of investigation.

One of his characteristics was that he could not do anything well but in his own way, and he had a strong will to bring that way about. If he set his heart upon anything he was unhappy till he could attain his wish, and very persistent in his pursuit of it. Perhaps the greatest trial of his childish life was the ungratified desire for a pistol, and subsequently for a gun, the possession of which had to be deferred till he came to years of discretion. In early childhood he was shocked and made unhappy for a long time by finding out that men used guns against one another. The knowledge came on the same occasion that revealed to him the shooting of birds, sufficiently distressing in itself, for he loved birds as well as flowers, which he did not like to pull to pieces even to learn the mysteries of their structure. Probably the desire for the fire-arm grew first out of a sense of danger. The whole subject of war was discussed by degrees, and he was led to feel that there were some things dearer and nobler than life, and that men were driven by the injustice and encroachments of each other to defend themselves in this fearful way. But the whole subject of "man's inhumanity to man," was a painful one to so sensitive a child, who had known only love and kindness, and the "gun-man" was a sad subject often recurred to. He was not a timid child, however, and always showed personal courage and pluck when the defenceless were assailed. He was evidently meant to dwell in a robust body, for he may be said to have had a robust soul. Nothing stirred him so powerfully as narratives of bold enterprise. Preternaturally sensitive children are apt to become selfish, but he always showed conscience and consideration about his own wants. It troubled him that the articles he wished for to gratify his taste for the study of science were so expensive, but his parents tried to make him feel that they wished him to have everything that would conduce to his improvement, and when in after years he came into possession of his little patrimony, which he did virtually long before he was of age, his mother told him that it had been laid by for him at much personal sacrifice, that he might not

suffer for means of education, as his father had done, and gave him full liberty to furnish himself with all the books and apparatus he needed, and rarely interfered even with advice to restrain him, for he conscientiously devoted it to his education. We are assured by those who know him most intimately, that when he came into legal possession he was ever ready to share it with others for the same purpose. In his maturer days we find him urging a friend to accept a lucrative position, and even using his influence to obtain it for him, though at the same time by that very act he was depriving himself of the place, at once honorable and paying. Again he asked the same friend to take as a gift, some hundreds of species of plants, and does it in the following language: "I have two or three packages of plants laid aside for you which I wish to send on soon, not from any kind feeling but because I wish to have them out of the way." Even mere statements of disinterested friendship are sufficiently rare to make them valuable; acts of a similar character come but once in a great while, and we always acknowledge a refreshing sensation on seeing them.

It is a source of regret to his friends, that habitual modesty, or rather a painful under estimate of his own worth, often cut him off from a sympathy that must have been gratifying to him if he had known of its existence. It was given to few persons to know how deep down in his nature were rooted the purest sentiments of humanity. They were not kept on the surface for public exhibition. He was seldom demonstrative, and the mass of mankind would never have dreamed that beneath his reserve was an exquisite tenderness which would not allow the infliction of pain on the meanest creature.

A long tried domestic friend, who has known him as people can only be known in their own family, hearing that a sketch was to be written of him by some one, came to his mother and said, —

"It ought to be told of Mr. Horace how kind and good he always was to the poor—how much thoughtfulness he had for them, and for everybody that had work to do—and how patiently and uncomplainingly he bore his illness." To this devoted friend, who shared his love of all natural objects, he always showed any interesting or novel specimen, and called her to see the hidden glories of the microscopic world. Such a tribute as this is worth recording.

There is something of conscious purity in one who, through all the varying conditions of life, remains steadfast in his chosen plan, and in the darkest hours still sees beyond the cloud eternal goodness and justice smiling on him. Bad men or persons of negative goodness can never look thus hopefully on the future.

He wrote to his mother from the Hawaiian Islands that he hoped she kept her promise not to be anxious about him, that he was well and enjoying every moment, adding, "and if anything should happen

to me there is the whole delightful future." The quiet trust of our friend meant,

"And so beside the silent sea
I wait the muffled oar;
No harm from Him can come to me
On ocean or on shore.

I know not where His islands lift
Their fronded palms in air,
I only know I cannot drift
Beyond his love and care."

[To be concluded.]

ORDER OF MEETINGS.

Regular semi-monthly meeting held Feb. 1st. President in the chair. Records were read. Recent Correspondence and Donations were announced.

The President read an interesting paper prepared by David R. Peabody, upon the temperance organizations in the city of Salem, formed since 1841, vide next number.

Voted,—That the thanks of the Institute be given to Mr. Peabody for his valuable paper, and that it be referred to the Committee on Publication.

The President presented a manuscript memoir of Horace Mann, jr., from a friend and associate, vide page 25.

Voted,—To refer this also to the Committee on Publication, and that the thanks of the Institute be tendered to the writer.

Mr. F. W. Putnam exhibited several specimens of trout, about two weeks old, which had been placed in his charge for the purpose of having them drawn for a paper in the *Naturalist*, by Dr. A. Coolidge of Boston. These specimens were all monstrosities, and presented the following characteristics:—One had a second head and anterior part of the body growing out from its side, while another had two heads and was double throughout its anterior portion, but with a perfect and single tail portion. Other specimens exhibited a singular curvature of the spine which had prevented the fish, when alive, from swimming except in a circle. Dr. Coolidge has noted the fact that in all the several double headed monsters of trout that he has had alive that it was the *left* head that governed the motions of the fish, the *right* head in every case holding an inferior position. Mr. Putnam gave a farther account of the anatomy of these singular specimens, from information furnished him by Dr. Coolidge, which was followed by a discussion of such malformations as illustrative of the principle of germination, during which Dr. A. H. Johnson noticed the latest

theory of the cause of monstrosities, and Mr. A. Hyatt gave an account of the development of certain species of Polyzoa, illustrating the same with drawings, showing the principle of propagation by budding among the lower animals.

Mr. Putnam also read extracts from a communication received from Mr. Dexter, of West Barnstable, Mass., giving an account of the fish farm where the monstrosities mentioned were raised. At Mr. Dexter's place they had been very successful in raising trout and salmon. This paper contains a very full description of a fish farm with its breeding house and ponds for the fishes of different ages, and will be printed in full in the May or June number of the *Naturalist*.

Regular semi-monthly meeting, Feb. 15th. President in the chair. The Records were read. Recent Correspondence and Donations were announced.

Edward S. Morse presented a paper from Mr. Harper Pease of Honolulu, Sandwich Islands, entitled "Vertigo inhabiting Polynesia, with descriptions of new species." He enumerates six species as having been described from this region, and describes seven new species. He adds in a letter, that he has "discovered that they are distributed all over Polynesia, even on the Atolls, not elevated over five or six feet above the sea."

Mr. Morse then discussed the generic characters of this group, and described some of the characteristics of our native species of vertigo.

The President mentioned that the local committee of the American Association for the Advancement of Science—the meeting to be held in Salem, commencing on Wednesday, Aug. 18, 1869—had been organized, and gave an interesting sketch of the Institution, with a few reminiscences of some of those who were the active participants of the earlier meetings.

A number of geologists, who had been employed in the State Surveys, had felt the necessity of stated meetings for the interchange of opinions and observations, and conceived that great benefit would result therefrom in the prosecution of their investigations. In response to a circular issued by the members of the New York Survey, eighteen gentlemen met on the 2d of April, 1840, at the Rooms of the Franklin Institute, in Philadelphia, organized an association under the name of "The Association of American Geologists," and continued in session two days. At the third meeting in Boston, commencing on Monday, April 5, 1842, a Constitution and By-laws were adopted, and the objects of the association enlarged so as to embrace the collateral branches of the Natural Sciences, and the name was changed to "The Association of American Geologists and Naturalists."

At the meeting in September, 1847, another important step was taken, and the sphere of operations enlarged so as to embrace, hence-

forth, the advancement of all the departments of positive knowledge, and the promotion of intercourse between those who are zealous for their cultivation. In the reorganization the name adopted was "The American Association for the Advancement of Science." The meetings have been held annually (except during the years 1861 to 1865, inclusive) in different cities of the Union, and have contributed largely to the progress of American Science.

Candidates for membership were proposed.

Adjourned.

LETTERS ANNOUNCED.

Akhurst, J., Brooklyn, N. Y., Jan. 25; Aldrich, T. H., Troy, N. Y., Jan. 19, 23; Allen, B. R., Marblehead, Feb. 4; Almy, James F., Salem, Jan. 29; American Philosophical Society, Philadelphia, Feb. 5; Atkinson, F. P., Cambridge, Feb. 10; Boardman, Samuel L., Augusta, Me., Feb. 5; Boston Public Library, Boston, Jan. 23; Brown, W. B., Marblehead, Feb. 1; Dall, W. H., Washington, D. C., Jan. 20; Deane, R., Cambridge, Feb. 4; Dreer, F. J., Philadelphia, Feb. 5; Elder, J. G., Lewiston, Me., Feb. 8; Fellows, R. J., New Haven, Conn., Feb. 13; Freiburg, Die Naturforschende Gesellschaft, Oct. 18, 1868; Goodwin, W. F., Richmond, Va., Jan. 12, 28; Harvard College, Corporation of, Cambridge, Jan. 19; Hazeltine, Amos, jr., Haverhill, Jan. 29; How, Moses, Haverhill, Jan. 28; Howard, Charles D., Peabody, Jan. 25; Jenks, E. H., Pawtucket, R. I., Nov. 30, 1868; Kennedy, George G., Roxbury, Feb. 5; Langworthy, I. P., Boston, Feb. 5; London, Society of Antiquaries, Nov. 23, 1868; London Zoological Society, Nov. 16, 1868; Lugduno-Batavæ, Bibliotheca Universitatis, Sept. 14, 1868; Lynn Public Library, Feb. 2; Maine Historical Society, Brunswick, Jan. —; Massachusetts Institute of Technology, Boston, Jan. 19; Mead, Theodore L., New York, Jan. 19; Newhall, Josiah, Lynnfield, Feb. 5; New York Lyceum of Natural History, New York, Jan. 25; Nurnberg, Die Naturhistorische, Gesellschaft, Oct. 1, 1868; Owen, Richard, Bloomington, Ind., Jan. 23, Feb. 10; Park, Frank, Indianapolis, Ind., Jan. 16; Peabody Institute, Baltimore, Md., Jan. 30; Perkins, Henry C., Newburyport, Jan. 28; Poole, Stephen D., Lynn, Jan. 20, Feb. 3; Putnam, Moses W., Haverhill, Jan. 29; Quebec Literary and Historical Society, Quebec, Jan. 21; Reakirt, John, Philadelphia, Jan. 5; Runkle, J. D., Boston, Jan. 26; Sampson, Davenport & Co., Boston, Feb. 3; Thornton, J. Wingate, Boston, Mch. 15; Uhler, P. R., Baltimore, Md., Jan. 27; Veatch, Charles, Keytesville, Mo., Feb. 6; Verrill, A. E., New Haven, Conn., Jan. 16, Feb. 2; Waters, J. Linton, Chicago, Ill., Jan. 15; Warren, G. K., St. Paul, Minn., Dec. 18, 1868.

ADDITIONS TO THE LIBRARY.

BY DONATION.

BUTLER, B. F., M. C. Sherman's Speech in U. S. Senate, Jan. 6, 1869, on "Charting of Railroad Companies," 8vo. pamph; Shank's Speech in U. S. House of Representatives, Jan. 7, 1869, on "Recognition of Crete, 8vo. pamph.; Logan's Speech in U. S. House of Representatives, Jan. 8, 1869, on "Tenure of Office," 8vo. pamph.; Cary's Speech in U. S. House of Representatives, Jan. 5, 1869, 8vo,

pamph.; Monthly Report of Dep't of Agriculture, for Nov. and Dec., 1868, 8vo, pamph.; Boutwell's Speech in U. S. House of Representatives, Jan. 23, 1869; Sumner's Speech in U. S. Senate, Feb. 5, 1869; Daily Globe Supplement, Feb. 12, 1869.

GOODWIN, WM. F., U. S. Army. Correspondence between Gilmer and McCulloch, 8vo. pamph., Richmond, 1869.

HYATT, ALPHEUS. Report on the Mineral resources of U. S. A., 1 vol. 8vo, Washington, 1868; Report on the Commercial Relations of the U. S. with Foreign Nations, 1 vol. 8vo, Washington, 1868,

IOWA STATE UNIVERSITY. Catalogue for 1867-8, 8vo, pamph.

LEE, JOHN C. Commercial Bulletin for January.

LORING, GEORGE B. Files of Boston Post for 1868.

MUNSELL, JOEL, Albany, N. Y. Miscellaneous pamphlets, 13.

PARKER, GEORGE A. Thesaurus Linguae Sanctæ, Sive Lexicon Hebraicum, Authore Sancte Pagnino, 1 vol. folio, Lugduni, 1577.

PEABODY, JOHN P. The Hoop Skirt, 9 Nos., Salem, 1868 and 1869.

SMITH, A. AUGUSTUS. Boston Directory for 1864, 1 vol. 8vo.

STATEN, Mrs. D. F. Anti-Popery, by J. Rogers, 1 vol. 8vo, London, 1846; Les Ruines de Pompei, 12mo, Naples, 1858; Songs of Zion, 1 vol. 12mo, Boston; Goodrich's History, 1 vol. 12mo, Boston, 1848; Beeklard's Physiology, 1 vol. 18mo, New York, 1842; Pamphlets, 10.

STONE, BENJ. W. Seventh and eighth Annual Reports of the Commissioners of Public Charities and Correction, 2 vols. 8vo., New York, 1867, and Albany, 1868; Manual for the use of N. Y. Legislature, 1867 and 1868, 2 vols. 12mo, Albany, 1867, 1868.

STONE, E. M., of Providence, R. I. Twenty-seventh Annual Report of the Ministry at large, 8vo, pamph., Providence, 1869.

SUMNER, CHARLES, U. S. Senate. Morton's Speech in U. S. Senate, Dec. 16, 1868, on "the resumption of specie payments"; Monthly Report of Dep't of Agriculture, Nov. and Dec., 1868, 8vo, pamph.

BY EXCHANGE.

AMERICAN PHILOSOPHICAL SOCIETY. Proceedings, No. 80, 8vo, pamph.

BOSTON PUBLIC LIBRARY. Bulletin for January, 8vo, pamph.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, vol. xii, sigs. 13, 14.

FREIBURG, GESELLSCHAFT FÜR BEFÖRDERUNG DER NATURWISSENSCHAFTEN. Bericht über die Verhandlungen, Band v, Heft 1, 8vo, Freiburg, 1868.

IOWA STATE HISTORICAL SOCIETY. Annals of Iowa, for Jan., 1869, 8vo, pamph.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. Fourth Annual Catalogue of Officers and Students, for 1868-69, 8vo, pamph.

NEW YORK HISTORICAL SOCIETY. "Historic Progress and Democracy," an Address by J. L. Motley, Dec. 16, 1868, 8vo, pamph.

NURNBERG, NATURHISTORISCHE GESELLSCHAFT. Abhandlungen der, Band iii, Hälfte 1, 11, and Band iv, 8 pamphlets, 8vo.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. Proceedings for Sept. and Oct., 1868, 8vo, pamph.

PUBLISHERS. American Journal of Conchology, vol. 4, pt. 4; American Literary Gazette, Jan. 15, Feb. 1; Book Buyer, Jan. 15; Canadian Naturalist, Jan. —; Christian World, Feb. —; Cosmos, Feb. 13; Essex Banner, Jan. 22, 29, Feb. 5, 12; Gardener's Monthly, Feb. —; Gloucester Telegraph, Jan. 20, 23, 27, 30, Feb. 3, 6, 10, 13; Hardwick's Science Gossip, Jan. 1, Feb. 1; Haverhill Gazette, Jan. 22, 29, Feb. 5, 12; Land and Water, Nov. 28, Dec. 12, 19, 26, Jan. 2, 9; Lynn Reporter, Jan. 20, 23, 27, 30, Feb. 3, 6, 10, 13; Medical and Surgical Reporter, Jan. 16, 23, 30, Feb. 6;

Nation, Jan. 21, Feb. 11; Naturalist's Note Book, Feb. — ; Peabody Press, Jan. 20, 27, Feb. 3; Salem Observer, Jan. 23, 30, Feb. 6, 13; Trübner's American and Oriental Literary Record Jan. 15; Western Bookseller, Feb. 1.

ADDITIONS TO THE MUSEUMS OF THE INSTITUTE AND THE PEABODY ACADEMY OF SCIENCE.

WILLIS G. BURNHAM, Essex. A beautifully made Stone Axe, found in Essex.

BROWN E. SHAW, Salem. A framed Photograph of the Hairy Family of Ava, Burma, and one of a Group of Andamanese, Natives of the Andaman Islands, Bay of Bengal.

JOHN R. MANSFIELD, Salem. Malformed Egg of Common Fowl.

A FRIEND, Salem. Four steel spurs used by the Malays for arming fighting cocks.

T. S. BRIGHAM, Salem. Two specimens of Snow Buntings (*Plectrophanes nivalis*) and two Lesser Red-poll Linnet (*Ægiothus linarius*), from Salem.

H. B. GRIFFIN, Salem. Egg case containing embryo of Skate, from Rockport.

J. G. WILLIS, Salem. Embryo of Porpoise, and a young Flying Fish, taken on the passage from New York to Zanzibar.

Rev. A. B. KENDIG, Davenport, Iowa. A collection of shells from the vicinity of Davenport.

L. T. LEE, U. S. Coast Survey. Twenty-seven specimens of Algæ, from Tortugas, Fla.

SAMUEL KILLAM, Boxford. Carcasses of three Foxes, three specimens of Snow Bunting (*P. nivalis*), and one Snipe (*Scolopax gallinago*), all from the vicinity of Boxford.

PORTLAND SOCIETY OF NATURAL HISTORY. Three specimens of *Liparis* sp., found among Eel-grass in Portland Harbor; collected by C. B. Fuller.

CHARLES G. ATKINS, Augusta, Me. Living specimens of Young Salmon, and Eggs of *Salmo fontinalis*, from Grand River, Me.

JOHN H. SEARS, Danvers. A Stone Hatchet from Danvers, Carbonate of Lime from the same place, and Casts of Fossil Shells from Iowa. Three specimens of Woodpecker (*Picus villosus*), shot at Boxford.

J. C. JOHNSON, Newburyport. Head of *Symnus brevipinna*, taken off Newburyport.

W. S. COOK, Salem. Minerals from Mt. Washington.

SAMUEL KILLAM, Boxford. Specimen of Pine Grosbeak (*Pinicola Canadensis*), shot at Boxford.

CHARLES FISHER, Salem. Specimens of Gold, Silver, Copper and Lead ores, from California and Nevada.

ROBERT UPTON, Salem. Partial skeleton of *Lomvia* sp.

Capt. H. D. HALL, U. S. R. M. Specimen of *Squilla* from Cape Fear River, N. C.

WILLIAM GROVER, Salem. Four specimens of *Leda thraciæformis*, from the stomachs of Sand dabs, taken in the vicinity of Salem.

DUPLICATES.

Lists of this kind, which from time to time will be printed, show what we have to offer in conducting exchanges, or for sale.

ADAMS, JOHN QUINCY. Oration on the life and character of Lafayette, Dec. 31, 1834, 8vo, pamph., Washington, 1835. 50 cts.

ALLEN, M. O. History of Wenham, 1 vol. 12mo, Boston, 1860. \$1.25.

BOSTON ALMANAC, twenty-three vols., from 1839 to 1862, wanting only 1860, \$5.00.

FARMER'S ALMANAC, from 1795 to 1864, wanting only 1797, 1800, 1801, 1805, 1806; in all sixty-five numbers; good order. \$12.00.

CHRISTIAN ALMANAC, 1821 to 1861, wanting 1835, 1837, 1838, 1843, 1855, 1856, 1857, 1858.

ISAIAH THOMAS' ALMANAC, from 1790 to 1821, wanting 1791-3-4-5, 1809-10, 1811-12-14-15-16-17-19.

UNITARIAN ANNUAL REGISTER, 1846 to 1858, wanting 1848.

AMERICAN ANTI-SLAVERY ALMANAC, from 1836 to 1843, wanting 1841, 1842.

BELKNAP, JEREMY. The History of New Hampshire, 3 vols. 8vo, Boston, 1792. \$9.00.

BRAZER, JOHN. Discourse at the interment of Dr. E. A. Holyoke, 8vo, pamph., Salem, 1829. 35 cts. Sermon on anniversary of ordination, Nov. 19, 1837, 8vo, pamph., Salem, 1837. 35 cts. Discourse on the life and character of Hon. L. Saltonstall, 8vo, pamph., Salem, 1845. 35 cts. Discourse on the death of Hon. Benjamin Pickman, 8vo, pamph., Salem, 1843. 35 cts.

BRIGGS, G. W. Eulogy on Abraham Lincoln, June 1, 1865, 8vo., pamph, Salem, 1865. 35 cts. Address on the Birth-day of Washington, Feb. 22, 1862, 8vo, pamph., Salem, 1862. 35 cts.

BROMFIELD, JOHN, Reminiscences of (not published), 1 vol. 8vo, Salem, 1852.

BURLINGAME, ANSON. Oration at Salem, July 4, 1854, 8vo, pamph, Salem, 1854. 35 cts.

CLAPP, DEXTER. Discourse on the death of Rev. James Flint, 8vo, pamph., Salem, 1855. 35 cts.

COFFIN, JOSHUA. The Toppans of Toppan's Lane, 8vo, pamph., Newburyport, 1862. 30 cts.

EMERSON, BROWN. Sermon on the thirty-eighth anniversary of ordination, 8vo, pamph., Salem, 1843. 30 cts.

EVERETT, EDWARD. Eulogy on the life and character of J. Q. Adams, 8vo, pamph., Boston, 1848. 50 cts. Address in commemoration of Adams and Jefferson, 8vo, pamph., Boston, 1826. 50 cts.

FELT, J. B. Annals of Salem, 2d edition, 2 vols. 12mo, Salem, 1845-9. \$5.00.

Who is the first Governor of Massachusetts, 8vo, pamph., Boston, 1843. 30 cts.

History of Ipswich, Essex and Hamilton, 1 vol. 8vo, Cambridge, 1834. \$3.00.

Memoir or defence of Hugh Peters, 8vo, pamph., Boston, 1851. 50 cts.

FLINT, JAMES. Discourse on the death of Rev. John Brazer, 8vo, pamph., Salem, 1846. 30 cts.

GAGE, THOMAS. History of Rowley, 1 vol. 12mo, Boston, 1840. \$5.00.

GAY, EBENEZER. "The Old Man's Calendar" Discourse, Aug. 26, 1783, 8vo, pamph., Salem, 1822. 25 cts.

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BULLETIN

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FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

THE earliest permanent settlement within the limits of the Colony of Massachusetts Bay was made in 1626, at Salem, then called, by the Indians, Naumkeag, by a small company of persons, among whom were John Woodbury, John Balch, Peter Palfrey, William Trask, Thomas Gardner, Richard Norman, William Allen and Walter Knight, some of them with their families, and all under the superintendence of Roger Conant, the first Governor of the infant colony. A very full and valuable account of this company of Old Planters, as they were called, written by Mr. George D. Phippen, will be found in the first volume of our Historical Collections, page 97. J. W. Thornton, Esq., has given us a new and most interesting insight into their previous history as a company, and the nature of the government under which they were associated, in his "Landing at Cape Ann."

It seems that Conant had already explored this neck of land called Naumkeag, before finally concluding to remove

here ; and they were thus prepared to take advantage of the best locations for their dwellings. We should therefore naturally expect to find that they at once availed themselves of the good building ground, excellent and numerous springs of water and convenient harborage, which the central portion of the town affords. Whether this was actually the case, or whether the opinion is correct which has recently prevailed, that the first settlement was in the vicinity of Collins Cove, and near the Salem end of Beverly Bridge, we cannot at present decide with certainty. The facts of record, however, so far as they have yet been investigated, as well as the descriptions by contemporaneous writers, do not confirm the latter opinion, but on the contrary seem to lead to the conclusion that the first houses built in Salem, were in what is to-day the most central part of the city. Some of these facts will appear in the course of this article.

After the arrival of Gov. Endicott, in 1628, the town seems to have been regularly laid out in house-lots, in compliance with the order to that effect by the Company in London. We propose here to show, so far as we have been able to ascertain, the situation of some of these house-lots, and to give the names of their first known occupants. For our authority for the facts stated, we must refer generally to the various town and county records, from which they have been almost wholly derived. To secure certainty, we have traced the history of many of these house-lots down to the present time ; and in many instances, in order to establish a single point, it has been necessary to bring together a great amount of facts, all of which we are obliged to omit here. In this inquiry we have found great assistance from the lists of Commoner's rights, in the Commoner's Records of the year 1714, when every person owning land on which

a house had stood before the year 1661, had a right therefor in the Town Commons.

Washington street was originally laid out four rods wide from river to river; undoubtedly for the purpose of connecting the two primitive highways, which ran by the rivers' side, at the point where they approach nearest together. The Fort was enclosed between this street on the east, and North street and Summer streets, which were parallel to it, on the west. Essex street was probably at first only a way to the meeting house, and did not extend farther west than Washington street. This would account for the fact that the lines of Essex street, east and west of Washington street, do not agree, as they in all probability would have done if the street had been originally continued across. And this fact is still more noticeable when we remember that the house which formerly occupied the site of the Stearns Block, on the corner of these streets, stood out as far south as the curb-stone of the present sidewalk. That part of Essex street, west of Washington street, was called in 1670, "Mr. Batter's lane."

The four meeting houses of the First Church have all occupied the same spot; the first was built in 1634, and the "unfinished building of one story," which had been previously used for worship, was no doubt in the same vicinity. The dwelling house of Rev. Francis Higginson, who died here in 1630, was on ground now covered by the Asiatic Building, and faced towards the South river. That of Rev. Samuel Skelton, who died in 1634, was near where the Police Station now is, on Front street, and was called in 1643, "an old house," being then in the possession of William Brown.

The Fort above referred to was near the western corner of Sewall and Lynde streets, on what was the highest

land in that part of the town. Samuel Sharpe, who was sent over in 1629, by the Company in London, to take charge of military affairs, lived where the "Hunt house" lately stood, on the northern corner of Lynde and Washington streets. His land, consisting of about three acres, running back to North street, was known as "Sharpe's field." The house, with about half an acre of land adjoining, was conveyed by his son Nathaniel Sharpe, in 1684, to John Price, who, in 1698, conveyed the same land, the house having probably been taken down or removed, to Lewis Hunt, who, in 1701, built the house which was taken down a few years ago. North of the Sharpe homestead was about an acre of land, owned in 1656 by the widow Eleanor Robinson. North of that and extending from where the Court House is, to the North river, was a homestead of two acres, conveyed in 1656, by Thomas Wilkes, a shipwright, to Thomas Hale of Newbury. Next south of Mr. Sharpe's house was a house and one acre of land bought by Henry Cooke of Edmond Thompson, in 1645, and afterwards owned by Rev. Nicholas Noyes; the house stood just south of the residence of the late Robert Brookhouse. Next south was the house and one acre of land of Robert Adams, conveyed in 1649 to Edward Norris, and next south, on the corner, lived Edmond Batter, a leading man among the early inhabitants. On the opposite corner, where the Horse Railroad Office now is, was a house belonging to Hugh Peters, Pastor of the Church from 1636 to 1641, which was sold to Benjamin Felton in 1659. South and west of this was the homestead of Ralph Fogg, the first town clerk, afterwards owned by John Hathorne. South of that was a small house occupied, for a time, by the Lady Deborah Moody, and next south was the homestead of Hugh Peters, afterwards occupied by John Corwin. On the

corner of Norman street, lived Dr. George Emory, here as early as 1637. These house-lots on the west side of Washington street originally extended through to North and Summer streets, the houses being at the eastern end.

[To be continued.]

A SKETCH OF THE LIFE OF THE LATE HORACE MANN.

BY A FRIEND AND ASSOCIATE.

[Concluded from p. 31.]

To return to his boyhood. The next branch of natural science that interested him was chemistry, and this interest lasted for many years. He was not satisfied with other people's conclusions, but must make his own experiments. He was naturally cautious, and was allowed, under partial protest, to venture upon them himself; but some accidents occurred. He made some gunpowder on one occasion, and thought he had failed to make it explosive, but his parents were routed early one Fourth of July morning, by his flying into their chamber with his face and hands flashed with gunpowder. He had leaned too closely over his fuse, hardly expecting the desired result. He bore the pains of the event most patiently, thinking only of the probability of being forbidden any farther experiments, but the lesson was left to work its own result of caution.

He and his brother built themselves a furnace of fire-brick in the cellar, where they also had a miniature laboratory, and with the aid of a pair of blacksmith's bellows which they persuaded their father to buy for them, imitated as well as they could the labors of a neighboring foundry, where they had spent most of their leisure time for several months.

Two successive professors of chemistry took great interest in Horace at this time, and allowed him to assist them in their experiments before the College classes. He had not then entered the Preparatory School of Antioch College, but he studied the same textbooks that the classes used, and the Professors often wished the young men knew as much upon the subject as the boy. One of them, Dr. Henry Warrenner, has since remarked, that at fourteen "he was familiar with all the leading principles of chemistry, and that his knowledge was remarkable for its accuracy."

He suffered, when he was sent to school (at twelve years of age), from want of quickness of speech and of mere verbal memory, and was sometimes removed for home study when undue pressure occurred,

or any want of perfection in the performance of lessons was distressing to him, and his nerves needed the ease and relief of unstimulated study.

When, at this age, Horace and his brothers were violently seized by the measles, to reconcile them to their confinement and to save their eyes their mother read to them, and among other books the narrative of Dr. Kane's Arctic Expedition. This work was then exciting a perfect hero-worship in favor of its author. To the younger brothers the tale of danger and exposure came as a glorious romantic adventure, and in their childish emulation of Dr. Kane, chairs were turned into sledges, the floor into an ice-field, and they played alternately the parts of dogs and sailors. But to Horace, who usually entered with spirit into such dramatic play, it was the labor of scientific men for scientific truth, as well as the desperate effort of seekers for the long-lost, and subsequently a terrible struggle for life, home and happiness. So intense was his appreciation of the cost at which science and humanity were thus enriched that his brothers' play seemed to him sacrilegious levity, and after enduring it in sorrowful silence for a time he said to his mother, "I wonder that you can let them do so,—I should as soon think of playing Jesus Christ!"

This remark was made in no lack of reverence. It was simply a measure of his sympathy with distress and self-sacrifice. He never lost his interest in this exploration, but followed it up through all subsequent narratives, and traced out the various attempts upon maps of his own drawing. It also inspired him with a strong desire to be an explorer.

Horace had been sent to visit some friends at the East, as a means of benefiting his health after a college year of rather too hard application, and was absent on the distressing occasion of his father's last painful illness and death. When he returned to his mother she put herself and younger children, boy as he was, into his hands with the expression that he must now take care of them all. He accepted the duty with such convulsive energy of manner, that she afterwards regretted throwing such a responsibility upon him. He was never after the gay, happy boy, but prematurely a man in character and feeling.

When his friend, Dr. Warrenner, came to Cambridge, in 1860, to study Zoölogy and Comparative Anatomy, Horace, who was then living in Concord, begged very hard to join him. When urged to defer it, he plead the possibility that Professors Agassiz and Wyman might not live till he left College, for which he was then preparing, and finally, with the concurrence of his tutor, who said the boy's mind was so intent upon his favorite pursuits that it might be best to indulge the strong tendency; for the moment the dull grammar

was closed, out poured the interesting items and enquiries about Chemistry and Zoölogy, which absorbed all his interest, and he was allowed to go. He thought he should be willing to return to College preparations, and his excessive labors in the Museum (for Prof. Agassiz was then arranging it, and his pupils worked with great enthusiasm to aid him) induced his mother to take him away at the end of the year, with the hopes of his doing so. He tried the Greek, with an interesting and able teacher, but his heart was not in it. After listening to all the arguments that could be adduced on the other side, to which he gave respectful consideration, in spite of his strong protest, he was allowed three months to deliberate, unmolested, between Harvard College, the Lawrence Scientific School, and West Point. Mr. R. W. Emerson, who took much kind interest in him, and who generally councils the College course, said, "If the boy has a vocation thank God for it and let him follow his genius." Mr. Thoreau, with whom he had become intimate on a journey to the West, told him "no teachers ever did him any good in College." The result of the deliberation was what might have been expected, and he rejoicingly pursued the Scientific path. In this decision he could have found many supporters among the most advanced thinkers of the age.

His powers of observation became more keen than ever under the training, and he undoubtedly studied with some feverish anxiety, in order to justify his course. The field widened as he proceeded. It had been his taste and inclination, rather than any conscious process of reasoning, that had determined his course, but he grew more and more confident that he could study better alone, and with a purpose, than in classes, where the mastery of subjects was impossible, and with only a vague expectation of future good. His enthusiasm and exhaustive application became almost too intense for his bodily strength. He worked at Zoölogy in his leisure hours, in his own way, which was to reduce all animal life to its lowest terms—skeletons! And this gave him some out-of-door recreation.

He excelled in anatomical preparations, and a large collection of alcoholic specimens attest his industry; some hundreds of these finally found their way to the Cambridge Museum, and many of the reptiles he collected went abroad to other Museums. The Museum ditch at Cambridge was supplied by himself and brothers with turtles, frogs, snakes, etc. His mother, by whom these details are furnished, writes: "The reign of snakes was a reign of terror to the uninitiated, especially when on one occasion six or seven goodly sized ones escaped from the place of their confinement in the house and were not to be found for many days." These details of early life serve to show that "the boy was father to the man."

The course of study led him at last to Botany, to which he gave himself wholly at the time as was his wont with every scientific pursuit. Prof. Agassiz's friendship and direction had enlisted his interest in Zoölogy, as a science. Dr. Gray now extended the friendly hand. Soon discerning merit, the last named gentleman took him under his especial training. From this time—Eureka! the line of work was found. The success of the labor proves the justness of the final decision. He learned to love the science, not only for itself but for the great teacher.

It was by Dr. Gray's advice that he visited the Hawaiian Islands, in company with Mr. Wm. T. Brigham. The expedition was not only fruitful to himself, but to his favorite science, for such it became, although he ever regarded it as but one limb of that study of Geology which was to tear the secrets of time from the bosom of the earth.

Of this expedition let his companion, Mr. Brigham, tell.

"When Dr. Asa Gray was told I was soon to visit the Hawaiian Islands he asked me to collect the very peculiar flora of that group, and suggested the propriety of asking Horace Mann to accompany me. It was a short notice, but his friends advised him to go, and he joined me in California. From that time, for more than a year, we were constant companions, and many a long ride, many a weary walk did we share. For more than six months we kept house together in Honolulu, and from the first day to the last he was the same modest, retiring, hard-working, unselfish, conscientious man. Thoroughly alive to all the beauties and wonders of nature there surrounding him he often wrote home that he enjoyed every moment; and often, indeed, have I seen him in perfect ecstasy over the discovery of some new plant after a hard climb up some island precipice."

"As the result of our Hawaiian explorations, five new genera were added to the flora, one of which was dedicated to him under the name of *HESPEROMANNIA*, and has been engraved for the next part of our *Memoirs* (Boston Society of Natural History) while of new species of flowering plants no less than seventy-one, or more than eleven per cent. of the entire Phænogamous Hawaiian Flora were discovered. His published works, besides a number of reviews in the *American Naturalist* (one of which was written a short time before his death), were:—*On some Hawaiian Crania and Bones*.—Proc. Bost. Soc. Nat. Hist., vol. x, p, 229. *On the present condition of Kilauea and Mauna Loa*.—Ibid, vol. x, p. 229. *Denudation on the Hawaiian Islands*.—Ibid, vol. x, p. 232. *Revision of the Genus Schiedea and some of the Rutaceæ*.—Ibid, vol. x, p. 309. *Description of the Crater of Haleakala*.—Ibid, vol. xi, p. 112. *Enumeration of Hawaiian Plants*.—Proc. Amer. Acad. Arts and Sciences, vol. vii, p. 143. *Flora of the Hawaiian Islands*.—Proc. Essex Institute, vol. v. The last has not been com-

pleted, and a number of other valuable and interesting memoirs remain unfinished."

As among his publications, we will still add a *Catalogue of the Phænogamous Plants of the United States, east of the Mississippi; and of the Vascular Cryptogamous Plants of North America, north of Mexico*. This was published during the summer of 1868, and was a work much needed to facilitate exchanges among botanists.

During February, 1864, before leaving California for the Sandwich Islands, he and Mr. Brigham went together to Virginia City, in Nevada, and also to the Geysers, collecting such plants as came in the way, Horace collecting with much delight the splendid lichens of California.

Mr. Mann left the Hawaiian Islands for San Francisco, en route for Cambridge, May, 1865. He and Mr. Brigham had planned a voyage to Micronesia, but at the last moment the captain refused to allow them to trade with the natives for corals, to the extent that they desired, and the project fell through.

This expedition to the Hawaiian Islands proved of great advantage to his health. He had begun to loose ground by too intense application, but the constant life in the open air in a delicious climate, and his perfect dietetic habits, reinstated him completely. To use his father's words, "he always ate to the glory of God."

With these facts before us we need hardly ask how one so young and so delicate by nature succeeded in accomplishing so much work and in doing it so well. It often happens that one element of character gives the key to all others and explains the result of a life-work. In the case of our departed friend this one element was thoroughness—a constant seeking after the depths.

As a student he was accustomed to read and re-read the same book or articles over and over again, until, when at last it was laid aside, he was perfect master of it. Hence the accuracy of his knowledge. As an investigator his tenacity of purpose was equal to his desire to avoid error by crude observation or hasty generalization. This one feature was enough to have stamped him as no ordinary character; for in this age of fierce struggle for mental supremacy there are few who can resist the temptation to rush into print with at most, but the probability of being completely and absolutely right. This morbid desire for reputation tends rather to make its possessor notorious, and inflicts on the world legions of scientific errors. No such charge can be laid against the researches of Mr. Mann. He was scrupulously careful and painstaking in his observations.

This is, perhaps, the proper place to ask what order of mind did he evince? Was he one of those daring geniuses that come by intuition to great truths, and fling their opinions forth to the criticisms of the

world, with a defiant "I think thus and so," but deign to offer no reason for what they feel assured will eventually be accepted; or was he less a genius, and more a logical reasoner, arriving at his own conclusions only after patient investigation, and then always able to assign a reason for his belief? Personal friendship may in a measure disqualify the writer for passing judgment, but the latter of these two views is perhaps the more correct one. If he did dazzle us less frequently, there was, in a corresponding degree, a certainty that he would rarely lead us astray. Genius seldom improves much by age. Its first flight may be its loftiest. The philosophic mind grows, and comes, in time, to reach an elevation high as that gained by genius, perhaps, and does it by a method infinitely more sure. His capacity for development was large, and his efforts to reach the fullest growth unceasing, hence it is but fair to register the belief that the highest botanical interests of the country would never have suffered in his hands. All advances made were substantial and likely to need but little subsequent change or qualification.

It is the testimony of those who saw most of him in his latter days that they were often surprised by his knowledge of topics which came more directly into their paths of study than his own. As the bodily frame wore out the expansion of his mind became more rapid, and his ideas clearer; the very expression of his face was noted as more brilliant than ever before. His plans of future study were laid out upon a broader scale than ever, comprising more historical research, for which he had a growing taste, and more metaphysical reading.

In reference to these latter pursuits he realized anew the loss he had sustained in his father, who would have taken such a profound interest in the farther unfolding of the mind to which he had first introduced the wonders and glories of the universe.

Mr. Mann's intimate friends were chiefly persons older than himself. One of these, who has taken much interest in his botanical pursuits, and has given him many facilities of research, remarked of him, that "he was singularly impersonal—that he never seemed to think of Horace Mann." Indeed his modesty was such that he probably did not estimate himself at anything approaching his own value. His eye was ever on the standard that receded before him, and he never measured himself by results achieved.

Sincerity was naturally another trait of such a character. It often expressed itself bluntly, when in opposition to what he felt to be a want of it.

In his impatience at the inaccurate statements so often made by idle talkers, he was once heard to wish that no one could ever speak unless they had something to communicate which they knew perfectly and

could swear to. It was suggested that society would be rather dull in the present state of knowledge; but he still preferred the silence to the conjecture. When asked a question himself, he invariably said "I don't know," unless he had either examined the subject himself or felt unquestionable reliance upon the authority he quoted. He was, therefore, far from loquacious, but once launched upon a subject that he understood he was a most agreeable and entertaining companion.

We should not convey an accurate impression of the balance of his character without recording that with all his gravity he had a keen sense of the ludicrous, and no one enjoyed true wit with a greater relish. It would elicit a smile in his weariest hours, and a well executed caricature would throw him into convulsions of laughter. He was also keenly susceptible to music, and a good judge of it. He once made some proficiency upon the piano, but it required too much time out of his busy life to be followed up to the degree of perfection that alone would have satisfied him.

In 1867, after several years of study in botany, he received from Harvard University his degree of Bachelor of Science. The examination was no mere form, but was thorough and searching; and resulted in a high grade being specified on his diploma.

The gentlemen present, and conducting the examination, were Dr. Torrey of New York, Profs. Gray and Agassiz of Cambridge—a fit trio to welcome to the field of *authorized, original investigation*, one who had already given so many promises of future distinction. May they long live to regret the untimely fate of our late friend; to direct others in his path; and to farther enrich the science they have so well loved.

We are not left to guess at the estimate placed upon him by competent judges. He was appointed, in the spring of 1868, to deliver a course of lectures in the rooms of the Boston Society of Natural History. This privilege was accorded only to decided merit, and although it was his first public attempt he evidently spoke out of a mine; for all his lectures but the first were extempore. Dr. Gray left him in charge of his herbarium, of the botanic garden, and of his College classes, and started for a prolonged trip to Europe, doubtless feeling assured that nothing would go wrong during his absence. He might well have wished that when the time came for his resigning the chair to a younger person, Mr. Mann would succeed him. He could not have found a successor more worthy, but let us hope that the need will long be postponed.

Excessive labor at length told seriously on his delicate constitution. Nothing could make him swerve from his allegiance to his friend and preceptor, Dr. Gray. And in anxiety to aid the latter in preparing for his protracted visit to Europe he concealed how weak and

worn out he was. His last letter to Dr. Gray was the first expression he had made to any one of the bitter disappointment with which he surrendered all the responsibilities he had assumed, and the fine prospects before him. His letter was full of devotion to the duties of the college and to science, which even the nervous irritability and inexpressible agony of body could not make him forget. He gave an intimation of this distress to his physician at that time, when he said "you can have no idea what self-control I exercise." And indeed he never for a moment forgot the claims of others. His delicacy of organization found no indulgence with himself. He was always ready to bear his part of care or toil, and never spared himself till, in the very last weeks, when every sensation was a pain, he one day gently requested that, unless it was necessary to consult him, he might not hear of anything painful or even inconvenient.

The college duties were only given up when assured by the authorities that his inability to conduct them longer should make no change in the furlough of Dr. Gray. This respite from labor, under good medical treatment, brought a temporary change for the better. Hope revived but only to be dashed to the ground. An unfortunate exposure to cold caused indirectly a return of the hemorrhage, from which he never rallied. The nervous symptoms from which he had long suffered were intensified in proportion as he sank. Debility brought accelerated motion of the heart, and loss of lung tissue caused shortness of breath. Sleep never came now but after the use of sedatives or hypnotics; except on the last day, when he remarked that he thought he could sleep. Pain then left him, and in the calm immediately preceding his death he expressed a sense of great relief. This was the final ray of light and hope that broke through the clouds of his sunset; a fitful gleam, just one, to illumine the flight to higher fields of study. Quietly and unexpectedly he had gone—before even the watching friends were conscious of a struggle. He died November the eleventh, 1868.

The post-mortem examination revealed the unexpected fact that one lung was entirely gone, and that disease had made sad inroads on the other. Had any vicious habits been engrafted upon his life he must have succumbed long before he did. The conditions of existence to him were virtue and strict temperance in all things; and he gave his body the full benefit of a rigid morality.

He was transparent in his goodness, genuine in his friendship, and useful in his short day! Should we not rather be grateful that he was given at all than repine that he was taken so soon? For one who needed little chastening a score of years was a long confinement to earth. What had his past given us reason to hope for had his life been spared? Rather, what in the way of true nobility and good sci-

entific fruits, to be earned by honest devotion to study, did it *not* give us reason to expect? The question suggests its own answer. Certainly he would have done much towards encouraging scientific pursuits in the rising generation, and in gaining for American Botanical investigation a more general acknowledgment abroad. Already a host of our young Naturalists are forcing the admiration of other nations, and among the foremost of that host was Horace Mann. As a writer he was clear and concise; points of the utmost importance to a scientist.

When Mr. Mann's death was announced to the Essex Institute, that body at once passed the following resolutions:

Resolved, That the members of the Essex Institute most deeply sympathize with the family and friends of their late associate, Horace Mann, whose sudden death not only casts a deep sorrow on the hearts of those near and dear to him, but also into the scientific bodies with which he was connected; and deprives his loved science of Botany of one of its most devoted and conscientious investigators, and of one, who, had he been permitted, would from his purity and depth of thought, undoubtedly make one of the leading botanists of his generation.

Resolved, That Dr. A. S. Packard* be requested to prepare a memoir of Mr. Horace Mann, to be published in the "Proceedings of the Essex Institute."

Resolved, That the Secretary be requested to transmit a copy of these resolutions to the family of our late associate, and to tender to them our condolence and sympathy in this bereavement."

These resolutions were accompanied with eloquent and touching recitals of the services Mr. Mann had rendered the Natural Sciences, and with mention of his rare and promising talents, by the President, Dr. Wheatland, Mr. F. W. Putnam, Mr. Alpheus Hyatt, Dr. G. B. Loring and others.

For years he had been Curator of the botanical department of the Boston Society of Natural History, and in the discharge of his duty there, it is needless to say, he left a good reputation. It has already been said that "his advice in the council was always sensible." The evening of the day on which he died, the American Academy of Arts and Sciences elected him a member by an unanimous vote. There can be no doubt but that this tribute to his moral worth and scientific attainments would have been grateful to him. It came too late. He had already passed to a sphere where it is pleasant to think he will be no more interrupted in his contemplation of Creator and creation.

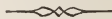
Is anything lacking in the son's character to make us feel that he did not realize the father's ideal, so forcibly expressed in many of his written words? As for instance, in speaking of the choice of a life-work by a high-toned man.

*This sketch was prepared by another fellow student, at his own earnest request.

"In selecting his vocation for a livelihood he abjures every occupation, and every profession, however lucrative they may be, or however honorable they may be falsely deemed, if, with his own weal, they do not also promote the common weal; and he views the idea with a deep religious abhorrence, that anything can advance the well-being of himself which involves the ill-being of others. However meagre his stock in trade, if he engages in business he will not seek to enlarge it by entering Conscience and Honor in his books, under the head of Merchandise."

Again, "seek frivolous and elusive pleasures if you will; expand your immortal energies upon ignoble and fallacious joys; but know their end is intellectual imbecility, and the perishing of every good that can ennoble or emparadise the heart! Obey if you will, the law of the baser passions—appetite, pride, selfishness—but know, they will scourge you into realms where the air is hot with fiery-tongued scorpions, that will sting and torment your soul into unutterable agonies! But study and obey the sublime laws on which the frame of nature was constructed; study and obey the sublimer laws on which the soul of man was formed, and the fulness of the power and the wisdom and the blessedness with which God has filled and lighted up this resplendent universe, shall all be yours."

Over all our hopes and affection for our friend the grave has now closed, leaving us only the ever-growing sense of what we have lost in his removal. It is sad thus to miss the familiar face and the friendly grasp, but to mitigate that sadness we have the knowledge that no long life ever comprised more joy in the universe than his short one; that none but the purest motives actuated his conduct in life; that no unjust act ever dishonored his own or his father's fair name. It is surely no disparagement to the young botanists who remain to say that among them there is not one who, in all respects, can fill the vacancy thus created. Science and humanity have both lost in his death, but the future is full of happiness for him who so lived and labored, loving and trusting God and man.



ORDER OF MEETINGS.

Regular semimonthly meeting, March 1st. President in the chair. The Records were read and the recent Correspondence and Donations announced.

Mr. F. W. Putnam exhibited a cap presented by Mr. W. N. Eaton, wrought by the natives of Aspinwall, California, from the leaf of the palm tree; also some shells (*Leda*, *Cardium* and *Pecten*) taken from the stomachs of Flounders. Mr. Putnam stated that we are obliged to

look to these animals for some species of shells which live at too great a depth to be often otherwise secured.

Mr. W. P. Upham read a paper giving a description of the original house-lots in the central part of Salem, and the names of their first occupants, so far as known. This paper is commenced on the first page of the present number.

Mr. Geo. D. Phippen followed and gave a graphic description of that early period in our history, particularly of the arrival of Endicott, Higginson and Winthrop, which occurred in the summer time. The pleasing impressions that the country gave them as they approached the land, are recorded by them with much enthusiasm. They write of "the gay woods and trees" that skirted the shores, covered the islands, and filled the air with a delicious aroma peculiarly grateful to the weary voyagers, and of the satisfaction they experienced when, upon landing, they first plucked the small fruits and numerous flowers that decked the "hills and dales" of Naumkeag.

Mr. P. took occasion also to speak in the highest terms of the zeal and abundantly rewarded investigations of Mr. Upham, which had removed, he thought, all doubt as to the first location of the Old Planters; and he was glad of the opportunity to adopt the views of Mr. Upham, that the Old Planters occupied that portion of our territory which has ever remained the nucleus and central body of the town. By reference to an article entitled the "Old Planters of Salem, which appeared in vol. 1, of "The Historical Collections of the Essex Institute," although that article for the most part agreed with others in locating the Old Planters at the peninsula lying between the North River and Collins Cove, which is known as the "Old Planters Marsh," yet at the 15th line of page 103, and in the concluding paragraphs of page 197, it would appear that he himself had hinted that it was highly probable that some future investigator would be rewarded by securing such proofs as Mr. Upham had adduced. "The Old Planters Marsh," though owned and appropriated by them, it now seems, furnishes no evidence that they ever built thereon. The absence of cottages there, in the record of the Cottage Rights to the public lands, forbids that assumption. For strong statements in favor of the Collins Cove locality, see Rantoul in vol. vii, 3d ser., p. 254, of the Massachusetts Historical Collections; and Bentley in vol. 5, 1st ser., p. 218.

Mr. James Kimball made some interesting statements which he had gleaned from the perusal of the old records in the Court house.

Mr. Upham spoke of a recent visit to the rooms of the American Antiquarian Society at Worcester, and gave an account of some of the old Curwen and Bentley papers that are deposited in the library of that Institution. Many of them are very interesting, and from a careful examination, valuable materials for our history might be gleaned.

Mr. U. alluded with very strong expressions of gratitude to Mr. S. F. Haven, the accomplished and learned librarian, and his assistant, Mr. E. M. Barton, for their kind and polite attentions in furnishing every facility for the prosecution of his investigations. Several other members of the Institute have previously had occasion to consult the manuscripts and other documents in that library and have always experienced the same politeness and urbanity.

Lemuel B. Hatch was elected a resident member.

Adjourned.

Regular semimonthly meeting, March 15th. President in the chair. Mr. F. W. Putnam was appointed Secretary *pro tem*. The reading of the Records was dispensed with. The recent Correspondence and Donations were announced.

The President read a communication concerning Fire Clubs that have been organized in Salem since 1744. Vide next number.

Judge Waters followed and mentioned several reminiscences of the olden times in relation to this subject, and presented the records of the Relief Fire Club, which was associated June 24, 1803, and was dissolved Sept. 14, 1860, when it was voted that the balance of the funds, after paying the debts, be given to the Seaman's Widow and Orphan Association of Salem. This club included many of our leading citizens among its members.

An interesting letter was read from the late Judge Story, resigning his membership on his removal to Cambridge to enter upon the duties of Professor in the Dane Law School.

Mr. F. W. Putnam exhibited some specimens of Fossils from the Postpliocene of Ashley River, near Charleston, S. C. This deposit has recently attracted the notice of agriculturists and others from its immense beds of superphosphates, large quantities of which have been shipped for its fertilizing properties.

These specimens consist of vertebræ and ribs of *Manatus*; also several large sharks' teeth, probably of the genus *Carcharias*, and smaller specimens of the teeth of a species of *Lamna*.

The Institute is indebted to Mr. Wm. R. Cloutman, through whose kindness these specimens have been added to the Museum.

Mr. A. C. Goodell presented from Mr. S. P. Watson, a collection of minerals from Grafton, N. H.

The first number of the "Memoirs of the Peabody Academy of Science," which had been presented to the Institute, was exhibited by Mr. F. W. Putnam.

A general discussion on printing ensued, participated in by Messrs. Hyatt, Waters, Goodell and Putnam.

Elizabeth Wheatland was elected a resident member.

Adjourned.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. I. SALEM, MASS., APRIL, 1869. No. 4.

One Dollar a Year in Advance. 10 Cents a Single Copy.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

[Continued from page 41.]

SOUTH of Norman street, and east of Summer street, was a house and nine acres of land, bounded east on the South River, conveyed in 1651, by Thos. Ruck to John Ruck, afterwards known as Ruck's Village. After the Mills on the South River were built in 1664, an extensive business, connected with shipbuilding, grew up in the neighborhood of Creek street, then a cove called Sweet's Cove, from John Sweet, who was the original owner and occupant of the lot next north of the cove. South of Sweet's Cove, and forming the southern portion of the nine acres above mentioned, was a lot of four acres which had belonged to Rev. Samuel Skelton, and was laid out to him in 1630. Next south of this, and extending along the South River (now the Mill Pond) to land of Wm. Hathorne, which was west of where Hathorne street is now, was the "Broadfield," originally owned by Governor Endicott,

and by him conveyed to Emanuel Downing, who sold it to John Pickering.

What is now Broad street, together with the ground south of it, which has been used as a cemetery since May 17, 1655, was called the Town Common, and for the first few years, before the Town Bridge in Boston street was built, appears to have been the only means of exit from the town. A broad road thus led from Summer street to the Town Pasture, then common land, and there branched out in one direction round the west side of the South River, to Marblehead, and in the other passing near where the house of Mr. Horace Ware is, and around the west side of Norman's Rocks, and coming out on Boston street, above where the town bridge was afterwards built (which was where the Engine House stands, near Goodhue street), thus avoiding the creek, which was then quite large, but has since almost wholly disappeared. Persons now living can remember when the low land to the north of Norman's Rocks was filled with water at high tide, and a very considerable stream ran under the town bridge. Goodhue street is, perhaps, a remnant of this old way, and the part of it on the other side of Boston street can still be traced.

West of the Broadfield was a farm of sixty acres owned by Wm. Hathorne, and after his decease by his son John Hathorne, which bounded north and west on the highway, now Broad street, west and south-west on the way leading to Marblehead, south on the Castle Hill farm, afterwards owned by Benj. Lynde, and east on the South River, now the Mill Pond, and on the Broadfield. On part of this farm was a little brook called Frost Fish Brook, described in the record as "coming forth betweene the twoe hills," on the east of which lived Richard Waters, gunsmith, as early as 1636, and near it was a

house-lot granted to John Abby, Jan. 2, 1637.* It appears by the Commoners Records that there were three houses on this farm before the year 1661, and that Wm. Hathorne's house was still standing in 1714, being then owned by his son Col. John Hathorne.

"Brick-kiln lane" led south from the western end of Essex street to the northerly gate of the Town Pasture; and west of it extending to Norman's Rocks was the "brick-kiln field," about six acres, conveyed by the heirs of Thomas Trusler, in 1656, to Wm. Flint. Richard Norman, who probably gave the name to Norman's Rocks, lived on the southern part of it, and John Barber on the northern part of it, before 1661. This was, perhaps, the same brick-kiln mentioned by Francis Higginson in 1629. We find it referred to frequently in the early records.

The northern part of Brick-kiln lane is now merged in the Turnpike; the southern part still remains leading from the western end of Warren street to the Pasture Gate. On the east side of this lane, bounding south by Broad street and east by Flint street, was the homestead of Richard Adams, conveyed by him to Lieut. John Pickering in 1679, and described as containing four or five acres, "being at the western end of the town over against Maj. Hathorne's: and is bounded with the street southerly, and a lane or street easterly, and a highway, or common land partly, westerly, and the land formerly of Wm. Flint, now the land of Edward and Thomas Flint, northerly." In 1646 the agents of Townsend Bishop conveyed to Richard Adams "one ould house with one acre of land within the common field, and about an acre and an half of land next to the common inclosed by itself." They also at the same time conveyed to Ralph Fogg "the new messuage or dwelling house of

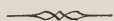
* See Town Record, Jan. 2, 1636-7, and April 23, 1638.

the said Mr. Townsend Bishop standing by the Rocks near Capt. Hathorne's house in Salem." It seems probable that Richard Adams came into possession of the latter house also, though we cannot find any deed of it; and, from the description, we think that it may have been the same as that which was recently burned and taken down on the north-west side of the upper end of Broad street. When this house was taken down it was found to be lined with brick between the wall and plastering, and to bear other marks of great age. This estate was divided in 1694 between Benjamin and William, sons of John Pickering, Benjamin taking the western part of the house and land, and William the eastern part. In the Commoners Record is entered for Benjamin Pickering "a cottage right near the Brick-kiln on Adams' land." This was probably for the "ould house" of Townsend Bishop mentioned above. William Pickering also has two rights entered for "Adams' house."

On the east side of Flint street, was the homestead of Wm. Flint, which consisted of one acre, bounded north by land of John Reeves, east on Cotta's lot, so called, and south on Broad street, and was bought by him of Thomas James, by deed recorded in 1652. After the death of Wm. Flint it was owned and occupied by his son Thomas Flint. Next east was "Cotta's lot," about five acres, extending from Broad street to Essex street, and owned before 1664, by Thomas Spooner, whose widow, Elizabeth, left it to her son-in-law, John Ruck. John Ruck conveyed half of it to Benjamin Gerrish, in 1681, and the other half to Thomas Maule, in 1687. Gerrish conveyed his part to Maule, in 1683. On the north-western corner of the lot, near where the Rev. Dr. Emerson now lives, was built the first Quaker meeting-house, the land being given by Thomas Maule for that

purpose. The name Cotta's lot, originated from Robert Cotta, who was the first owner. There were two houses on it before 1661. Next east was a lot of three acres, which Michael Shaffin conveyed, in 1684, to Robert Kitchen "as the son and heir of John Kitchen" in consideration of "£15 by me received of John Kitchen in the year 1638." John Kitchen had been in possession of this lot for many years, probably from the year 1638, and lived on it at one time, but afterwards removed to the other side of Essex street, where he built the house that was taken down about twenty years ago, on the western corner of Beckford street. March 6, 1654, the town granted to John Kitchen sufficient land "to make a sellar neare unto goodman Trusler's fence over against the house of the said John Kitchen." Thomas Trusler's homestead was on the opposite side of Essex street, and was afterwards owned by Thomas Robbins, who in 1679 conveyed to Robert Kitchen, as son and heir of John Kitchen, a quarter of an acre, bounded east by Beckford street, and south by Essex street. This, as well as the deed by Michael Shaffin, was undoubtedly to supply the loss or want of a previous deed to John Kitchen.

[*To be Continued.*]



LESLIE'S EXPEDITION TO SALEM, 1775.

The following communication from Mrs. Sparks, is a valuable and interesting contribution to this portion of our local history.

[*Copied by Jared Sparks, in the Public Offices of London, 1828.*]

BOSTON, March 4, 1776.

GAGE TO DARTMOUTH. — "I have the honor to transmit to your Lordship a paper of intelligence of the machina-

tions and projects of this people. The authority should be good, but I must wait till some more favorable opportunity to inform you whence I derived this intelligence."

"The circumstance of the eight pieces at Salem led us into a mistake, for supposing them to be brass guns brought from Holland, or some of the foreign isles, which report had also given reasons to suspect, a detachment of four hundred men, under Lieut. Col. Leslie, was sent privately off by water to seize them. The places they were said to be concealed in were strictly searched, but no artillery could be found, and we have since discovered that there had been only some old ship's guns, which had been carried away from Salem some time ago. The people assembled in great numbers, with threats and abuse, but the Colonel pursued his orders and returned to Marblehead, where he had first disembarked his detachment."

(J. S.) The intelligence alluded to above was procured by some spy in the employment of Gen. Gage. From the nature of his communications it is quite certain, also, that the same person was a member of the Provincial Congress. He gives a very minute account of the secret proceedings of the Congress, and even the doings of the committees appointed for specific objects, such as procuring army ammunitions, and other stores. In short he details particulars of the correspondence between some members of the Congress, and Dr. Franklin and Arthur Lee, in England. This intelligence was sent to Gen. Gage, from time to time, and was forwarded by him to the minister, and it is now on the files. It would seem impossible that any person, who was not a member of Congress, could have procured the facts contained in his communications.

"There are eight field pieces in an old store or barn near the landing place at Salem; they are to be removed

in a few days ; the seizing of these would greatly disconcert their schemes."

This proved erroneous. Gen. Gage expected to find some cannon, which he believed had been imported from Holland. Sir Joseph Yorke, the British minister in Holland, had written a letter to his government indicating his suspicions that arms were shipped from that country to America. A copy of this letter had been forwarded to Gen. Gage, who from other causes entertained similar suspicions. Indeed, after receiving the copy of Sir Joseph York's letter, cruisers were sent out to watch for a Rhode Island vessel returning from Holland, which it was supposed had arms on board.



NOTICE OF A SINGULAR ERRATIC IN LYNN, MASS., KNOWN BY THE NAME OF "PHAETON ROCK."

BY C. M. TRACY.

A prominent object among the operations of the Exploring Circle of Lynn has always been the investigation of the phenomena of the local drift, particularly as exemplified in the numerous erratic rocks and boulders with which this region so abounds. In an exploration of this kind, Mr. Jos. M. Rowell, Geological Member of the Circle, was so fortunate as to discover, in the northeasterly part of the township, the very remarkable block which makes the subject of this article. It lies on the southerly slope of a ridge which forms a kind of outlier on the southwest side of the fine eminence known as "Orne's" or "Prospect" Hill, in the adjoining town of Peabody. The neighborhood is singularly full of loose rocks ; blocks of many tons in weight are to be seen in

almost any direction, many of them perched on the top of high, precipitous ledges, in positions apparently the most insecure, or again, scattered over the barren slopes in such numbers as almost to prevent the carrying away of the meagre growth of pine, which is almost all these hills afford of vegetation. But unless I greatly err, the geologist and the casual stroller will be alike apt to forget all they have seen of this kind in the vicinity, when standing for the first time beside this most unique and wonderful memorial of the glacial age.

Its position, topographically, is about one fourth of a mile from the northwesterly shore of "Brown's Pond," and from ten to twenty rods, as is understood, from the boundary line between Lynn and Peabody here indicated by a stone-wall. Approached from the north-east it offers such an appearance, that with a little help, of a very pardonable imagination, Mr. Rowell easily likened it to an antique chariot, perhaps that of Sol himself; and by a natural transition of ideas, gave it the name of "Phaeton Rock," by which it is called in his paper describing it, filed in the Registry of the Circle, June 20, 1856. On the western side, however, a different view is afforded, and it looks more like a piece of mammoth artillery.

Those who, not having visited the place, desire more full ideas of its aspect, must imagine a solid precipice of sienite, from ten to fifteen feet high on its almost vertical face, fronting the south, and nearly flat on the top. A given space upon this flat top is tolerably level, the side toward the west being a few inches higher; and on this space are arranged four sub-globular stones, three in almost a straight line along the higher western side, and about two feet apart. These are almost alike in size, being about eighteen inches in diameter. A fourth stone,

two feet or rather more in diameter, lies three or four feet eastward of these three, nearly opposite the southernmost one. All these stones have enough of irregularity to prevent rolling, though no long axes can be specially noted in either of them. The different magnitudes are so well accommodated to the gentle slope of the underlying rock that the tops of all come very nearly to one level; and the whole system approaches the edge of the precipice within some two or three feet. They are all of light gray sienite, much like the ledge.

Balanced, with the utmost delicacy, on these four supporters lies a great block of sienite also, of a shape like half a pear. The under side, very straight and flat, sits truly on the stones below it; and the whole length of the mass being some fifteen feet, the narrower and thinner end, which points southward, *projects forward over the edge of the precipice some five or six feet*. The mean vertical thickness of the block is not far from seven feet, but the irregular convexity of the top makes this thickness very variable. The eastern edge is throughout quite thin, comparatively, the western is thick and the centre of gravity is evidently well towards this side. Yet so perfectly is everything disposed that the stability of the whole seems fully secured, and it would no doubt require a great force to disturb it, or throw it down the steep over which it so daringly reposes. The whole horizontal girth of the great block is forty feet, and a very careful estimate made by the Circle places its weight at thirty-six tons. And so playfully does it seem poised upon its pebble-like bases that one can hardly help a first thought, that here has been a piece of huge but idle labor of man—a work like Stonehenge or the Dwarfie Stone of Hoy—and yet such a notion vanishes straightway on a closer examination. There are no vestiges here of any ancient

builders, no Druids nor Skalds, piling rocks like these, with engineering fit to baffle a Brunel. This is all pure nature. This massive block was doubtless left resting here on its four certain props at the same time, whenever that may have been, when its brother blocks were torn from their parent beds and tossed at random in a thousand spots, as we see them all around. And since that tremendous period, it may have been before the human era, this block has lain secure and strong, on a foundation that looks as if it might yield to the first tempest.

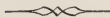
The geological records of the world are nowise poor in rocking stones and remarkable boulders. The mother country has many very curious ones. The Buckstone in Gloucestershire, and the Cheese Ring in Cornwall, are familiar to all tourists through England. Likewise, Hitchcock has told us of notable instances in our own state; a double one in Barre, another, vaster still, in Taunton, and others nearer home. But Phaeton Rock is something different from all these, something perfectly unique and instructive. It is as though Nature—in the midst of all that prodigious process, by which huge masses were hurled hither and thither with Titanic force, and granite and porphyry were ground down to clay and sand—had paused to play, in childlike simplicity, with these five stones, piling them as an infant's block-house, and leaving them to make us wonder, ages after, at the grand stability and perfection of the rare toy she had constructed.

In Sithney Parish, Cornwall, lay once the celebrated "Logan Stone." Says an old writer, "it was so nicely poised on another stone that a little child could move it, and all travellers who passed this way desired to see it. But Shruballs, Cromwell's Governor of Pendenis, with much ado caused it to be undermined, to the great

grief of the country." Lewis, in his history of Lynn, records several such instances of wanton destruction of these things. Certainly, then, we can hardly hope for much longer safety for this so tempting a trap for idle folly, save in the hands of some known protector of these aids to knowledge.

It is hardly necessary to attempt here any speculations as to the process by which this stone came to be where it now is. Indeed, this is an inquiry more pertinent for the geological professor than for the mere topographer. Yet there are considerations of a purely mechanical sort that will not fail to arise in the mind of any reflecting person, when contemplating such a work of nature; and really the dynamics of the drift period seem throughout to lean more to the mechanical than the chemical side. It is hardly possible to suppose Phaeton Rock to have been ever moved more than once—ever raised from its first landing-place, while the smaller stones were driven under it—but we must, I think, conclude that all were borne along together with an unmeasured bulk of other like material, till in the slackened velocity of the current, the heavy block settled through the silt and gravel, catching its four inferiors just when and where we see them, while the lighter stuff passed on, and is now covering the south-eastern ledges. But this alone will not, probably, account for a tithe of the phenomena to be seen in the connection. The questions of distribution, longer or shorter transit, duplicate and cross currents, and a dozen others, come in to complicate and confuse, till the study of the drift rises to the grade of a first-class problem in science. It becomes me to leave the inquiry here, with the reiterated wish, that this monument, more rarely designed and sculptured than the Obelisks of Luxor, or the chiselled Stone of Sweno, might be made a choice specimen in the

well-guarded cabinet of Old Essex, long kept to tell its ancient story to the humbly inquiring mind that comes seeking to know more and more of the History and Mystery of the Earth.



ORDER OF MEETINGS.

Regular meeting held April 5th, the President in the chair.

The record of the last meeting was read. Donations to Cabinet and to the Library, and the recent correspondence were announced.

The President read a letter from Mrs. James Sparks of Cambridge, containing a copy of a letter found by Mr. Sparks at England, which revealed the information which led to the expedition of Col. Leslie to capture cannon at the North Bridge in 1775 (vide page 57).

Hon. Charles W. Upham delivered an eloquent and instructive address on the Colonial Records of Massachusetts under the first charter. At its conclusion Judge Joseph G. Waters enthusiastically commended the sentiments embodied in the lecture, especially noticing the Orator's defence of the New England Fathers against the ridicule to which they had been subjected for their use of the Old Testament Scriptures as authority in their political government.

Mr. Waters offered the following resolution:—

That the thanks of the Institute be presented to Mr. Upham for his very beautiful and instructive lecture.

This was unanimously adopted. This lecture was recently delivered before the Lowell Institute of Boston, and may now be found among their publications.

The following persons were elected resident members: Walter K. Bigelow, George A. Fisher, George W. Peirson, George O. Harris, James Harris, all of Salem. Adjourned.

Regular meeting held April 19th, the President in the chair.

Owing to the absence of the Secretary the reading of the records was dispensed with. The recent correspondence and donations to the Cabinets and the Library were announced.

Hon. Charles W. Upham delivered a lecture upon the life and character of Daniel P. King, of Danvers, which was listened to with great interest and delight.

The following resolve was passed:—

Resolved, That the thanks of the Institute be given to Mr. Upham for his address, and that he be requested to furnish the Committee on Publication a copy for publication in the Historical Collections of this Society.

Adjourned.

LETTERS ANNOUNCED.

(March and April.)

Adair, D. L., Hawesville, Ky., Jan. 29; Allen, G. N., Oberlin, June 10; Appleton & Co., New York, Feb. 16; Basel, Naturforschende Gesellschaft, Oct. 30, Nov. 11; Bergen, Norway, the Museum, Oct. 10; Boardman, S. L., Augusta, Me., Mch. 27; Boston Public Library, Mch. 1, 23, 25, Ap. 2; Buck, Stewart M., Van Buren Furnace, Va., Ap. 12; Buffalo Historical Society, Mch. 23; Challen, Howard, Philadelphia, Feb. —, Mch. 1, Ap. 1; Chicago Academy of Science, Ap. 5; Christiania L'Universite Royale de Norvege, Nov. —; Cloutman, W. R., Charleston, S. C., Feb. 18; Cook, Henry, Boston, Mch. 23; Conant, W. P., Dalkoff, St. Charles Co., Mo., Ap. 6; Connecticut Historical Society, Ap. 5; Cope, Edward D., Philadelphia, Penn., Feb. 22, Mch. 6; Dall, Wm. H., Washington, D. C., Feb. 12; Dartmouth College, Trustees of, Hanover, N. H., Mch. 26; Davenport, M. G., Chester, Penn., Mch. 5; Dawson, Henry B., Morrisania, N. Y., Mch. 24, Ap. 1, 12; Dyer, John F., Providence, R. I., Feb. 20; Dresden, Neue Jahrbuch für Mineralogie, Nov. 4; Edinburgh Royal Society, Dec. 19; Freiburg, Die Gesellschaft für Beförderung der Naturwissenschaften, Oct. 20; Genève, Institute National Genevois, Nov. 14; Gilman, Henry, Detroit, Feb. 28; Goldthwaite & Day, Salem, Feb. 17; Hoy, P. R., Racine, Mch. 1; Hanaford, Mrs. P. A., Reading, Mch. —; Harris, George O., Salem, Ap. 17; Harvard College, Corporation of, Mch. 19; Holbrook, M. L., New York, Feb. 11; Howard, J. J., London, Eng., Feb. 15; Howell, Robert, Nichols, Tioga Co., N. Y., Mch. 10; Iowa State Historical Society, Feb. 11; Jillson, S., Hudson, Feb. 22; King, D. Webster, Boston, Ap. 17, Mch. 1; Langworthy, I. P., Boston, Mch. 1, 4; Laws, John W., Portsmouth, N. H., Feb. 19, Ap. 15; Lewis, E. A., Batavia, N. Y., Mch. 26; Lincoln, Solomon, Boston, Ap. 3, 9; Lincecum, George W., Long Point, Texas, Oct. 18; London, Anthropological Society, Jan. 20; Loring, George B., Salem, Feb. 25; Maine Historical Society, Mch. 23; Mann, Mary, Cambridge, Feb. 24, Mch. 16, 18, Ap. 4, 14; Massachusetts Institute of Technology, Mch. 23; Maryland Historical Society, Ap. 7; Miller, James, New York, Feb. 18, 19; Minot, C. S., Boston, Feb. 15; Minnesota, Historical Society, Ap. 7; Moravian Historical Society, Nazareth, Penn., Ap. 1; Nauman, Charles F., Lancaster, Feb. 23; New England Historic-Genealogical Society, Boston, Mch. 22; New Jersey State Geological Survey, New Brunswick, N. J., Mch. 23; New York Lyceum of Natural History, Mch. 22, Ap. 12; New York State Library, Jan. 23; Nichols & Noyes, Boston, Mch. 22; Noyes, Edward A., Portland, Me., Feb. 27, 29; Peabody, George, London, Dec. —; Peabody, John P., Salem, Mch. 1; Pennsylvania Historical Society, Ap. 10, 16; Poole, Herman, Ithaca, Mch. 4, 27; Portland Society of Natural History, Mch. 22, Ap. 1; Reshore, F. H., Dowagami, Mich., Mch. 6; Robinson, John, Salem, Ap. 19; Ropes, John C., Boston, Mch. 22; Rothrock, J. T., McVeytown, Pa., Mch. 16; Sever & Co., Boston, Feb. 11; Smith, W. A., Worcester, Mch. 22; Smithsonian Institution, Washington, D. C., Dec. 2, Feb. 11; Spofford, Jeremiah, Groveland, Feb. 15; Stearns, W. A., Amherst, Feb. 17; Steiger, E., New York, Feb. 10; Stone, E. M., Providence, R. I., Feb. 13; Strecker, Herman, Reading, Pa., Jan. 19; U. S. Department of Education, Washington, Mch. 12; U. S. Surgeon General's Office, Mch. 30; U. S. Department of the Interior, Mch. 18, 19; Verrill, A. E., New Haven, Conn., Feb. 23; Ward, Raymond L., Sumter, S. C., Jan. 18; White, W. O., Keene, N. H., Mch. 23; White, Henry, New Haven, Conn., Mch. 26; Wilson, John, Cambridge, Ap. 5; Wood, N. H., Portland, Me., Mch. 5; White, Charles A., Iowa City, Iowa, Feb. 9; Würzburg, Physikalisch-medicinische Gesellschaft, Oct. 24; Yale College, Corporation of, Mch. 23.

ADDITIONS TO THE LIBRARY.

(March and April.)

BY DONATION.

BARLOW, JOHN, Salem. Record of the Massachusetts Volunteers, 1861-'65, 1 vol. 4to, Boston, 1868. Fifth Annual Report of the Board of State Charities, 1 vol. 8vo, Boston, 1869.

BOWDOIN COLLEGE. Catalogue of the Officers and Students, Second Term, 1868-'69, 8vo, pamph., Brunswick, 1869.

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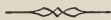
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ADDITIONS TO THE MUSEUMS OF THE INSTITUTE AND THE PEABODY ACADEMY OF SCIENCE.

(March and April.)

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S. CARLIN. Specimen of a Domestic Cat, 13 years old.

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One Dollar a Year in Advance.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

[Continued from page 57.]

It thus appears that the lot above mentioned was owned by Michael Shafin before 1638; and the price which John Kitchen paid for it, indicates that there was a dwelling house on it at that time; but it had disappeared in 1684. It was long known as the "Kitchen field," and extended from the east side of Hamilton street westerly two hundred and seventy-five feet, and southerly from Essex street to Chestnut street. After the death of Robert Kitchen it was owned by his son Edward Kitchen, who left it by will, in 1766, to Edward Kitchen Turner.

East of the Kitchen field was a lot of about the same dimensions, originally owned by Thomas Antrum. It extended easterly to a line about one hundred and twenty feet west of Cambridge street, and southerly to Chestnut street. East of this, and extending one hundred and twenty feet east of Cambridge street, was another lot

originally owned by Richard Graves; and between that and Summer street was an acre of land, with a dwelling house on it, conveyed by the heirs of Philip Veren, in 1655, to Wm. Lord, and by him to Wm. Lord, Jr., in 1658.

South of the last two lots (those of Richard Graves and Philip Veren) and extending on Broad street from Summer street to a line one hundred and twenty feet west of Cambridge street, was the homestead of Francis Lawes, which, together with the Richard Graves lot which he also owned, making in all about five acres, he left by will, in 1666, to his son-in-law, John Neal, and his wife, and after their death to their son Jonathan Neal. Part of this estate has been retained in the same family to the present time. Francis Lawes lived on the east corner of Cambridge and Broad streets, and the hill where the burying ground now is was in the earlier years called "Lawes Hill." In 1721, Samuel Gaskill, aged eighty years, testified "that the dwelling house upon the hill by ye Almshouse in Salem, where Jonathan Neal now dwells, built by Francis Laws, was standing there before ye year 1660." The Almshouse was where the Normal School building is now. Jonathan Neal left his homestead, by will, in 1732, to his sons Jonathan and David, and in the division, in 1753, the dwelling house was assigned to Jonathan. In a deed by him in 1774, he mentions "*my old house*," as being on the eastern corner of Cambridge street; and in the inventory of his estate, in 1795, is mentioned the dwelling house, now standing, on the west corner, and also "*an old dwelling house*" on the east corner of Cambridge and Broad streets. This last was no doubt the one referred to in the above deposition.

* Francis Lawes also owned the Antrum lot, above men-

tioned, and left it to his grandson, Joseph Neal, describing it as "part of that ground I bought of Mr. Edmond Batter and was formerly Thomas Antrums, and is bounded north with the street, east with the land of mine formerly the land of Richard Graves, south with the land of John and Jonathan Pickering, and west with the land of John Kitchen." In 1681 Thomas Maule bought of Joseph Neal the eastern portion of the Antrum lot, and also of Jonathan Neal a small portion of the Graves lot, and built the house in which he afterwards lived, and which was taken down a few years ago. Mr. James B. Curwen, who lives on the same site, has the original deeds in his possession.

Jonathan Neale also conveyed a house lot, in 1680, to Benjamin Marston, who built thereon the house now standing on the western corner of Cambridge street, which street was then first laid out as a private way between that house lot and another which he conveyed to Samuel Wakefield. Wakefield sold his house in 1684, to John Bullock, Innkeeper, and in 1706 it was conveyed to Richard Pike. Another house lot, next east, was conveyed by Neal, in 1680, to Samuel Shattuck, Jr., hat-maker and dyer, who built there the house now standing, part of which is owned and occupied by Mrs. Mary C. Stowers. This was the house to which Bridget Bishop came to get some lace dyed, when the effect Shattuck thought her visits had upon his child, aroused his suspicions that she was a witch, and caused him to testify against her at her trial in 1692.

The house of William Lord, who owned the acre of land at the corner of Essex and Summer streets, was where Mr. Jonathan Peirce now lives. The southern part of his land, near the northern corner of Chestnut and Summer streets, was used by John Mason, from 1661

to 1687, for making bricks, and afterwards by Isaac Stearns for the same purpose; and west of that as far as to Cambridge street, was another "brick place" owned by Thomas Maule, and afterwards Samuel Woodwell.

South of the "Kitchen field" and the Antrum lot, and fronting on Broad street from the land of Francis Lawes to Cotta's lot, above described, which was about two hundred feet west of Pickering street, was the homestead of John Pickering, of about five acres. The first house in which he lived when he bought the Broadfield of Emanuel Downing, in 1643, was near the site of the present dwelling now occupied by John Pickering, Esq., his descendant in the seventh generation. This house, now standing, is one of the most interesting relics of the past we have in the city, both from its having been always occupied by the same family, and on account of its well authenticated antiquity. The following is taken from an account of this house in a memorandum book, and was written by Col. Timothy Pickering, Dec. 3, 1828. After referring to another house which his eldest sister Sarah (Pickering) Clark, who died Nov. 21, 1826, in her 97th year, remembered as standing at a small distance eastward of the present house, Col. Pickering writes :

"I well remember that when I went to the woman's school, being then only six years old, my father raised the roof of the northern side of the present house, and so made room for three chambers to accommodate his family, having then nine children. The roof, according to the fashion of the time, running down on the northern side, so as to leave but one upright story. The windows were glazed with small panes, some diamond-shaped, and the others small oblongs. These were all set in leaden strips, formed thin, with grooves (by a machine made for the purpose) for the reception of the glass, on which the lead was easily pressed close down. Where the leads crossed they were soldered together; and I perfectly remember seeing the glazier, Moore by name, setting glass in the old windows, in the manner here described.

I remember hearing my father say, that when he made the alterations and repairs above mentioned, the eastern end of the house was one hundred years old, and the western end eighty years old. Consequently the eastern end is now (Dec. 3, 1828) 177 years old. For I am 83, and was but six years old in July, 1751, the year in which the alterations and repairs took place.

I also remember hearing my father say, that, supposing the sills of the house must be decayed, he had provided new white oak timber to replace them; but that the carpenter, when he had ripped off the weather-boards, found the sills sound, of swamp white oak; and the carpenter told him that they would last longer than any new sills he could provide; and the same sills remain to this day.

At the southern side of broadfield, a little eastward of the salt marsh, were many logs projecting beyond the low bank — manifestly the remains of a wharf,* erected when what is now the Mill Pond of the South Mills was a continuance of the South River."

Col. Pickering's father was Deacon Timothy Pickering, who was born in 1703, and to whom Jonathan, a son of the first John, conveyed, in 1727, his portion of the homestead land, being the eastern part, and consisting of an acre and a half, together with the dwelling house on it in which he then lived. This house was no doubt the one remembered by Col. Pickering's sister, Sarah. Deacon Timothy Pickering had five years before inherited the western part of the homestead, including the house now standing, from his father John, who was a grandson of the first John. There can be no doubt, therefore, that his statement of the age of the house was correct; according to which the eastern half of the house is now two hundred and eighteen years, and the western part one hundred and ninety-eight years, old. This is also confirmed by the records, particularly the Commoners record, which shows that John Pickering was, in 1714, allowed two rights "for his father's house;" that is, the house in which his father had lived (the one now standing) was built before 1661. It also appears from the same record, that

* See Essex Inst. Coll., Vol. VIII, p. 22.

Jonathan Pickering's house (which stood to the east of the present house) was the same "which one Deacon built before 1661." The first John Pickering died in 1657, and his widow Elizabeth married John Deacon. The oldest son John, remained in the house which his father had built in 1651, while his mother and the younger son Jonathan, removed to the new house which John Deacon built on that part of the homestead which was set off to Jonathan. The mother died in 1662; and in 1671, the two brothers made a final settlement of the estate between them, at which time, according to Deacon Pickering, the western part of the present house was built. In regard to the original house in which John Pickering lived previous to 1651, we have the following evidence given in a deposition by his grandson, showing that it was sold in 1663 or 1664, and removed to another place. On the Commoners Record for 1714, is entered one right to John Pickering "for his grandfather's house," which shows that another house had stood on his land which had belonged to his grandfather and was built before 1661. The following explains what became of it, and is also interesting as showing at what an early period houses were moved.

"The testimonie of John Pickering of full age saith, to his certain knowledge the little house that was William Beenses* was his father's Cottage Right, that is allowed to me. He further saith that in the year 1663 or 1664, my father sold it to William Beens and it was removed to that place with oxen.

JOHN PICKERING."

Opposite the Pickering house and south of Broad street (which at first included the present Cemetery and a strip of land west of it), was the "Broadfield" consisting of twenty acres and extending from the Hathorne

* William Beans lived where now is the corner of Boston street and the Turnpike.

farm, the line of which corresponded nearly with Phelps Court, east and south to the South River, now the Mill Pond. This was at one time called the "Governor's field." * It was sold by Gov. Endicott to Emanuel Downing before 1640, as appears by a deed of mortgage on the Suffolk Records, dated June 8, 1640, and acknowledged Dec. 20, 1644, by Emanuel Downing of "his mansion house† at Salem with four acres more or less thereto adjoining, and *twenty acres more purchased of Mr. Endicott, lying upon the South River.*" John Pickering subsequently came into possession of the Broadfield by virtue of a deed of Indenture, now in the possession of John Pickering, Esq., of which the following is a literal copy :

"This indenture made the 11th day of February anno 1642 Witnesseth that Lucey Downinge the wife of Emanuel Downinge of Salem in New Englande Esq. & Edmund Batter of Salem, gent: for & in consideration of the summe of twenty two pounds haue bargained & sould & by these presents doe bargain & sell to John Pickerring of Salem aforesaid carpenter all that parcell of grounde lying before the now dwelling house of the sd. Jno. Pickerringe late in the occupation of Jno. Endicott Esq. with all the appurtenances thereto belonging, abutting on the East & South on the river commonly called the South river & on the West on the land of William Hawthorne & on the North vpon the towne common. To haue & to houlde to him, his heirs & assignes forever. In consideration whereof the said Jno. Pickerring doth couenant to pay to the said Lucey & Edmund or either of them the aforesaide sume of twenty two pownds in manner and forme followinge. That is to say nine pownds of her debts to such persons as she hath appointed & eight pownds in bacon at vi^d the pound & corne at such rates as they are sould commonly by Capt: Traske the 2d week in Aprill next whereof *xxi* bushells is to be of Indian the rest pease and wheate and the other five powndes in such comodities as her occasions require excepting money & corne. Prouided that if the aforesaid Jno. Pickering shal not duly performe the several payments according to agreement that then it shall be lawfull for the said Lucey

* See Essex Inst. Coll., Vol. VIII, p. 23.

† Afterwards Gov. Bradstreet's.

& Edmund or either of them to reënter and enjoy the said premises as before notwithstanding this agreement or any thing therein contained: In witness whereof the parties aboue-said have hereunto set their hands & seales interchangably the day and yeare aboue written. Sealed & deliuered in the presence

of vs SAM: SHARPE. WILLM HATHORNE

LUCIE DOWNINGE [Seal.]

EDMOND BATTER [Seal.]

This Indenture is endorsed as follows:—Mrs. Downings and Mr. Batters Sale of the Broadfield unto Carpenter John Pickering—1642—

On a separate paper is the following confirmation by Emanuel Downing:

“I doe freely agree to the sale of the ffeild in Salem made by wife to Goodm: Pickering witness my hand this 10th of the 12 moneth 1643.

EM: DOWNINGE.

(Endorsed.) This Febr: 10th 1643 Emmanuel Downinge Esq. his Confirmation of his wife Lucies Sale of the Broadfield unto Carpenter John Pickering.”

These papers have always remained in possession of the family and were not recorded till 1785. The expression “late in the occupation of Jno. Endicott Esq.,” has been thought to apply to the dwelling house of John Pickering,* but it seems most probable that it referred to the “parcell of ground” which it appears by other evidence had belonged to Gov. Endicott.

The westerly half of the Broadfield, being that part lying between Phelps court and Winthrop street, consisting of ten acres, came, in some way, into the possession of William Lord, Sen., who, in 1668, conveyed it to Nicholas Manning; and it finally, in 1756, came into the possession of Joseph Hathorne, and thus became merged in the Hathorne farm, except one acre and a half on the eastern side. Hathorne street was laid out, as a private

* See Essex Inst. Hist. Coll., Vol. II, p. 40.

way, through this portion of the original Broadfield in 1807. In 1808 the Town conveyed to the abutting owners a strip of land which until then had formed part of Broad street, lying on the north side of the Broadfield from Winthrop street, where it had the same breadth as the burying ground, extending two hundred feet west of Hathorne street where it came to a point. Winthrop street was not laid out till 1842; and up to that time the Broadfield, except the western part above described, remained unbroken in the Pickering family, with the exception only that, from 1720 to 1731, five acres on the east side of Winthrop street were owned by Samuel Browne, to whom was allowed, in 1722, "a cottage right in the broadfield" for Edward Adams' house, built before 1661.

[To be continued.]



ORDER OF MEETINGS.

Regular meeting held May 3, the President in the chair. The Records of the last meeting were read. Donations to the Cabinets and to the Library, and the correspondence were announced.

Robert S. Rantoul, Esq., read a paper* containing historical reminiscences connected with the Salem Custom House, commencing with a brief but vivid recital of the early and noble commercial history of Salem. The speaker proceeded to give short biographical sketches of former Collectors at this port. It was voted that the thanks of the Institute be presented to Mr. Rantoul, for the fidelity with which he has investigated his subject, and for the able and interesting manner in which he has presented it to our minds.

Alfred Osgood of Newburyport was elected Resident Member.

Annual meeting held Wednesday, May 12, the President in the chair. Records of last meeting read.

The annual reports of several of the officers were read and accepted.

THE SECRETARY, in his report, made the following statements. The present number of Resident and Corresponding Members was 805. The following have deceased during the year. Joseph Andrews, died

* Printed in the Historical Collections of the Essex Institute, vol. x.

at Boston, Feb. 8, 1869, aged 60 years. Charles W. Brewster, died at Portsmouth, N. H., Aug. 4, 1868, aged 66. J. Vincent Browne, died at Salem, Aug. 29, 1868, aged 66. Henry P. Herrick, died at Beverly, Mch. 31, 1869, aged 58. Warren M. Jacobs, died at Peabody, July 8, 1868, aged 60. Joseph S. Leavitt, died at Salem, Aug. 17, 1868, aged 71. Charles Mansfield, d. at Salem, Oct. 22, 1868, aged 67. J. V. Scripture, died at Lincoln, Aug. 9, 1868, aged 29. Short biographical notices will be prepared for the *Historical Collections*.

No lectures have been delivered under the direction of the Institute during the past year, outside of its regular meetings, unless the eloquent address of Hon. Charles W. Upham, delivered at a special meeting, upon the life and character of the former President, Francis Peabody, may be so regarded. The correspondence of the Institute has been very voluminous. The number and character of its letters indicate that the Institute is continually attracting the cordial interest of naturalists and antiquarians, not only in our own country but in Europe.

The annual publications are three in number, viz: The HISTORICAL COLLECTIONS, the NATURALIST'S DIRECTORY, and the BULLETIN.

The *Historical Collections* has commenced a new series with Vol. 9, and discarding the small quarto form, now appears as an octavo.

The *Naturalist's Directory* meets with great favor, and measures have been taken to secure its prompt correction as the lapse of time may require.

The BULLETIN is intended to replace the *Proceedings* hitherto published and to give to the public a portion of the communications made at the meetings. A brief summary of all the proceedings at each meeting will be given, including the recent correspondence, and donations to the library and museum; deficiencies existing in the collections will be stated, and the methods by which its friends may best aid in rendering them more complete. The more extended historical and scientific papers, especially those that require to be fully illustrated, will be reserved for publication in another form. The scientific communications will probably be assumed by the Trustees of the Peabody Academy of Science, and printed under their auspices, in the Memoirs of the Academy.

From the foregoing statements it will be seen that the Institute maintains a steady and healthful growth. Some may regard the omission of a course of lectures and social entertainments, such as are mentioned in the report of the previous year, as an indication of declining zeal. On the contrary, those who are acquainted with the present circumstances of the Institute know that these omissions have been made necessary by the sudden introduction of new measures for advancing the objects of the Institute, which have called for the undivided attention and unremitting labors of our more prominent

and active members. The removal of the Natural History Collection of the Essex Institute to the Museum of the Peabody Academy of Science, and its re-arrangement there; the re-occupation of the cabinets in Plummer Hall, by transferring to them the valuable historical collections of the Institute, and the classification and arrangement of the antiquities, have involved a large amount of pains-taking toil. This, although less conspicuous to the public eye, is, nevertheless, quite as satisfactory an evidence of vigorous life.

But among other reasons which have had weight to lead the lecture committee to decide against a course of lectures has been the expense which necessarily attends such meetings. It is believed by many of our number, that if the means could be obtained to heat and light the lower room in Plummer Hall, a prolonged series of lectures could be maintained which should be comparatively inexpensive to the public, instructive, popular, and a source of income to the Institute. It is also believed, that to make the semi-monthly meetings attractive, they should be held elsewhere than in the narrow room to which they are now confined. It is hoped that before another winter, the small sum required to provide a furnace, suitable gas fixtures, and seats, will have been obtained, so that we may invite our friends to rooms more attractive to an audience, certainly more inspiring to a lecturer. Three lectures have been delivered at the regular meetings; two from Hon. Charles W. Upham, and one from Robert Rantoul, Esq. Owing to these and other addresses or written communications, the semi-monthly meetings have abounded in interesting instruction.

Of the Field Meetings it is hardly necessary to add that the five held during the past year afforded great pleasure and much valuable information to a large number of members and their friends who attended them. The spirit in which the citizens of the places visited have received the Institute and participated in its deliberations, shows how wisely chosen is this method of arousing and maintaining public interest in natural science and local history.

Contributions brought to the cabinets of the Institute have been as numerous as heretofore.

The SUPERINTENDENT of the Museum stated that the various changes which had taken place during the past two years, and the transfer of the Natural History Collections to the charge of the Trustees of the Peabody Academy of Science, would necessarily make his report quite brief.

At the last annual meeting the majority of the specimens comprising the scientific portion of the Museum, were reported as having been transferred to the Academy, and we have now the pleasure of stating that the Museum of the Academy, embracing the larger part of the collections of the East India Marine Society, and the scientific

portion of the Institute collection, with such specimens as have been received by the Academy, was opened to the public on Wednesday May 5th.

The rules of the Academy provide that its Museum shall be open to the members of the Essex Institute and the East India Marine Society on Tuesdays, from 10 A. M. to 5 P. M., and to the public, at the same hours, on Wednesdays, Thursdays, Fridays, and Saturdays. Monday of each week being strictly kept as a closed day.

The members of the Institute will be undoubtedly gratified with the appearance of the new Museum, which owes so much to their past labors, and thankful that the change has been so harmoniously and satisfactorily accomplished.

The removal of so large a portion of our former Museum, and the deposit with the Institute of a large number of specimens of an historical and antiquarian character, by the Trustees of the Academy, renders it very important that active measures should be taken by the Curators of the Historical Department in re-arranging the collection under their charge.

Attention is also called to the large collection of medals, coins, and paper money in the possession of the Institute, and a similar one held by the Academy from the East India Marine Society. Neither of the collections are on exhibition, and if some arrangement could be made by the Academy and the Institute, by which the specimens could be arranged and exhibited together, a most valuable and instructive collection would be the result.

During the past year a large number of donations have been received by the Institute, and after having been announced at the meetings, those belonging to the Natural History Department have been transferred to the charge of the Academy.

The LIBRARIAN has the honor to report, that from one hundred and ninety donors, sixty-three different learned societies, and thirty-six publishers, there have been received as donations and exchanges, the following, of which a more detailed list accompanies this report.

Serials,	906
Bound volumes,	940
Almanacs,	50
Pamphlets,	3,314
	<hr/>
	5,210

The exchanges this year have been especially valuable; of these, forty or more are from different foreign societies and publishers, to which may be added one hundred and forty-one different papers and serials received in exchange for the "American Naturalist," and at present deposited in the Reading Room.

All the work of removing the books to the new library hall, as well as the cataloguing, has been done under the direction of the President. The ample space appropriated for the department of newspapers, documents, miscellaneous pamphlets, and manuscripts, will admit of an arrangement that will greatly facilitate reference and consultation.

The CURATOR in charge of the Herbarium reports that on the 17th of March, 1868, he began the work of examining and re-arranging the specimens of plants in the possession of the Institute.

Attention was first given to the plants of Essex County. Selected Essex specimens were mounted on fine white herbarium paper, in the manner adopted by the Boston and Cambridge Institutions.

The work on Essex plants now stands as follows. The whole are sorted and mounted; about two-thirds of them have the Academy label on them. The Polypetalous orders, being the first forty-eight families, from the Crowfoots to the Cornels, are finished and wrapped, ready for the shelves. These are also entered in the first, or numbered catalogue, which is kept up regularly as the sheets are labeled. This finished portion includes one hundred and sixty-two sheets. The part not labeled takes in the lowest orders, from the grasses and carices, downwards.

In the autumn of 1868, attention was given to the dry specimens in the Marine Hall, such as cones, and other fruits, seeds, woods, etc. These were very numerous, and were not arranged until after many weeks' labor.

A full examination of all foreign specimens was made. This part of the work was largely extended by the receipt of a very considerable collection from Professor D. S. Sheldon, of Iowa.

Every plant known to be in possession of the Institute has been thus examined, and left, if not correctly arranged, at least in safe and good condition.

The TREASURER presented the following statement of the financial condition for the year ending May, 1869.

GENERAL ACCOUNT.

Debits.

Athenæum; Rent, half Fuel, etc.	\$429 50
Publications, \$1619 39; Salaries, \$672; Gas, \$7 60	2298 99
Repairs and fixtures, \$275 02; Sundries, \$66 58	341 60
Lectures and Social Meeting, close of previous year	432 17
Historical Department	24 12
Balance Account	95 30

\$3621 68

Credits.

Dividends of Webster Bank, \$40; Social Meeting, \$250 50	\$290 50
Peabody Academy of Science on account, \$250; Athenæum for Janitor, \$75	325 00
Sale of Publications, \$1359 29; Assessments, \$1,046 . . .	2405 29
Books, \$100; Sundries, \$43 99	143 99
From Natural History	167 00
Balance Account	289 90
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	\$3621 68

NATURAL HISTORY AND HORTICULTURE.

Debits.

Shells, part payment	\$25 00
To General Account	167 00
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	\$192 00

Credits.

Dividends, — Lowell Bleachery	\$180 00
Portland, Saco and Portsmouth Railroad	12 00
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	\$192 00

HISTORICAL ACCOUNT.

Debits.

Binding, \$71 62; Pamphlets, \$5 00	\$76 62
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Credits.

Dividends, — Naumkeag Bank	\$24 00
Michigan Central Railroad	28 50
From General Account	24 12
	<hr/>
	\$76 62

The various reports were approved and accepted.

The amendment of the Constitution, proposed at the two preceding Quarterly Meetings, was discussed, and on motion of Mr. James Upton, seconded by Honorable J. G. Waters, it was unanimously voted to adopt the same by substituting the word "three" for the word "two" before the word "dollars" in Art. VII. of the Constitution.

The nominating committee made their report which was unanimously accepted, and the following board of officers were elected for the ensuing year.

President.

HENRY WHEATLAND.

Vice Presidents.

Of Natural History—S. P. FOWLER. *Of Horticulture*—WM. SUTTON.
Of History—ABNER C. GOODELL, JR.

Recording and Home Secretary.

A. H. JOHNSON.

Foreign Secretary.

A. S. PACKARD, JR.

Treasurer.

HENRY WHEATLAND.

Librarian.

W. P. UPHAM.

Superintendent of the Museum.

F. W. PUTNAM.

Curators of Historical Department.

W. P. Upham, Henry M. Brooks, M. A. Stickney, John Robinson,
 R. S. Rantoul, W. S. Messervy, James A. Gillis, Francis H. Lee.

Curators of Natural History Department.

H. F. King, G. A. Perkins, C. M. Tracy, Caleb Cooke, Edwin Bicknell,
 E. S. Morse, Alpheus Hyatt, Benjamin Webb, jr.

Curators of Department of Horticulture.

John M. Ives, J. S. Cabot, R. S. Rogers, G. B. Loring, John Bertram,
 S. A. Merrill, Wm. Maloon, Andrew Lackey, G. F. Brown, C. H. Higbee,
 John F. Allen, Francis Putnam, Wm. Mack, B. A. West, G. D. Glover.

Lecture Committee.

James Kimball, A. C. Goodell, jr., Wm. C. Endicott, George Perkins,
 G. D. Phippen, E. S. Morse.

Finance Committee.

J. C. Lee, R. S. Rogers, G. D. Phippen, James Upton, S. Endicott
 Peabody, Robert Brookhouse.

Field Meeting Committee.

G. B. Loring, Samuel P. Fowler, C. M. Tracy, E. N. Walton, Charles
 Davis, A. W. Dodge, James T. Hewes.

Library Committee.

J. G. Waters, Alpheus Crosby, Francis H. Lee, R. S. Rantoul, W. P.
 Upham.

Publication Committee.

A. C. Goodell, jr., William P. Upham, F. W. Putnam, C. M. Tracy,
 R. S. Rantoul, A. S. Packard, jr., E. S. Morse, Alpheus Hyatt.

Rev. Daniel Dorchester of Salem, Michael H. Reynolds, and Wm. Litchman of Marblehead, were elected Resident Members.

Regular meeting held Monday, May 17. — President in the Chair.

D. Webster King of Boston, and Rev. George Batchelor of Salem, were elected Resident Members.

Field meeting at Wakefield, Thursday, June 10, 1869. — The first Field Meeting the present season, was held in the pleasant town of Wakefield; the natural scenery is fine, the several ponds affording a most attractive feature, while the hills and valleys and plains form an agreeable variety to the landscape. Lake Quannapowit, whose southern shore is near the centre of the town, is about a mile long and half as wide, and its waters float many pleasure boats in great demand by lovers of fishing and sailing, and on its shores are many groves and beautiful residences. Smith's Pond in the south part of the town is of smaller dimensions, but possesses many interesting features. Cowdrey's Hill and Hart's Hill are among the highest elevations in the town, from which extensive and lovely views are obtained. The day proved auspicious, and a large number of members and friends were in attendance; the major portion left Salem at 10 A. M., while the others assembled from the various cities and towns in the immediate vicinity. On the arrival of the train from Salem at the Water street crossing, the company left the cars, and were cordially welcomed by Edward Mansfield, Esq., in behalf of the people of Wakefield. An invitation from Cyrus Wakefield, Esq., to visit his Rattan Factory was accepted, and to most of the company it was a novel sight, exciting astonishment at the magnitude of the establishment, and admiration at the ingenious machinery and skilful operatives, and more than all at the exquisite beauty of the carpetings, chairs, baskets, canes, and many other useful and ornamental articles which are there manufactured exclusively of rattan. By the polite attention of Messrs. Trow and Carter, the various processes were explained to the visitors, by which the raw material is converted into the beautifully finished articles. The matting has the appearance of the finest Coir, while the baskets, chairs and settees, are of every desirable shape, and some of them of most beautiful finish; children's carriages, cradles, cribs, etc., etc., of great beauty; walking sticks of various patterns and colors; and innumerable articles, which most people had supposed to be made of other materials, were found among the every day products of this establishment, every part of the rattan being utilized to the fullest extent.

The party then proceeded to the Town Hall, and there forming into smaller groups, departed on different explorations, as inclination dictated, — the naturalists to Lake Quannapowit in quest of specimens; the antiquarian to the old records and other objects of historical

interest; the lovers of the picturesque to the neighboring eminences, to enjoy the beautiful scenery and extensive views, whilst those of a more practical turn visited the Iron Works, which employ about two hundred workmen; and some of the other manufacturing establishments. Many of the leading citizens furnished carriages, boats, and their personal services in adding interest to the occasion. At 1 o'clock the entire party assembled for the collation, and found that the townspeople had added liberally to the refreshments which the visitors had brought.

The meeting for the literary exercises of the occasion, was organized at 2 P. M. The records of the last meeting were read, and the donations and correspondence were announced by the respective officers.

The PRESIDENT gave a brief résumé of these social gatherings under the auspices of the Institute, and stated that the first Field Meeting was held in Danvers, in June, 1849; since that time there had been meetings held in forty-six different places in thirty of the thirty-four towns or cities of Essex county; and two outside the limits besides the present meeting.

Naturalist's Field Clubs have existed for several years in England, and no season passes without adding to the already numerous list. Some embrace among their objects "antiquities," in others these departments are kept distinct, and are pursued under separate organizations. The general plan is the same in all, though in the modification of the details there is some diversity. The enquiry, "*cui bono*," may be best answered in the words of some of their most zealous promoters.

Sir William Jardine, Bart., President of the Dumfriesshire and Galloway Natural History and Antiquarian Society, thus states the object of the society:—"To secure a more frequent interchange of thought and opinion among those who cultivate natural history and antiquities; to elicit and diffuse a taste for such studies, where it is unformed; and to afford means and opportunities for promoting it." The Rev. Leonard Jenyns, President of the Bath Natural History and Antiquarian Field Club says:—"There are two especial objects which a club such as ours has, or ought to have in view; one is the thorough investigation of the neighborhood in which it carries on its researches, as regards its natural history and antiquities; the other, the bringing together men of the same pursuits, with the addition of those who, without following up any particular branch of science themselves, may yet enjoy the society of those who do, or who may like to join the club for the sake of the excursions, the health and exercise they afford, and the pleasure of rambling over new ground." Leo Grindon, Esq., Secretary of the Manchester Field Naturalist's

Society says:—"The great aim of the society is to call forth and encourage latent taste for natural history." The President of the Liverpool Naturalist's Field Club says:—"Large numbers join our excursions who are not particularly interested in any branch of natural science, and this is just what the chief object of our club renders a desirable circumstance. The busy appearance of our workers, who often come in when tea is half over, flushed with exercise and animated with success, is a suggestive lesson to others who may be found waiting at the door of our meeting room half an hour or even an hour before the appointed time; a lesson on the difference of the amount of pleasure afforded by a walk with a special object and a walk without one."

It is gratifying to observe that an interest in these field excursions has been awakened in this country; the Worcester Natural History Society has held several during the past two or three years, and contemplate their continuance the present season. Last week the Natural History Section of the Pittsfield Young Men's Association, held a very successful meeting at Stockbridge, and several of the members of the Institute were present and took part in the proceedings.

Mr. F. W. PUTNAM of Salem was introduced and gave an account of his researches in the department of zoölogy, exhibiting specimens of two species of turtles found in the pond—the Painted and the Musk—and described their peculiarities, as he also did of the Pickerel, the Perch, the Shiner, and several other species of fishes found in the town. He also exhibited a cluster of fish eggs, the species of which he had not yet identified. He gave an interesting account of the May-fly, which at this season is very abundant in many places. Mr. Putnam next alluded to a fine group of stone and copper implements which had been collected in Wakefield by Mr. James H. Carter and brought to the hall for inspection, some of which he had kindly donated to the Museum. He called special attention to the copper implement as being of the greatest interest and rarity; as but very few copper implements had been found in Massachusetts. The speaker remarked that within a few years increased attention had been given to the study of Archæology, and spoke of its importance in contributing to our knowledge of the different races of people that had inhabited this continent prior to the advent of the European.

Mr. E. S. MORSE spoke of the different mollusks or shells found in ponds and brooks during the day and now exhibited to the meeting, happily illustrating his remarks on the blackboard. He traced the development of animals through their various stages of growth, the common frog being selected as the representative.

Hon. LILLEY EATON of Wakefield was next called upon. He extended words of welcome, congratulation and gratification, to the friends

from Essex County, and stated some excellent reasons why a visit to Wakefield, although beyond the limits of that County, was peculiarly appropriate; one, its contiguity, bordering on said County and adjoining two of her towns, with many of whose inhabitants we have daily extensive and intimate business and social relations; another, it was once a part of Essex County, and the Indian deed of its territory stands recorded in the Essex Registry.

He then mentioned several historical incidents respecting the past and the present of Wakefield, of which the following may be specified. The first settlement was made around these ponds, by the removal of several persons from Lynn, about the year 1639, and was called Lynn Village, until its incorporation in 1644, when it was named Reading, and annexed to the County of Middlesex; as the settlements extended to other parts of the township and were organized into parishes or precincts, this place was called the First Parish of Reading, and was thus designated until 1812, when it was incorporated into a separate town under the name of "South Reading;" this name was changed in 1868, to "Wakefield," in honor of one of its most munificent citizens. Not only were the earliest settlers all from Lynn, but many subsequent were either from Lynn or from other towns in the County of Essex.

Peter Palfrey an early settler and distinguished citizen of Salem, removed hither before 1652, probably on account of a daughter having married Benjamin Smith of this town, who lived near the present station of the Salem Branch Railroad, and near the pond, that, from his family, was called "Smith's Pond." Smith and his wife (whose name was Jehoaden) were probably cultivators of fruit, for we find that two excellent varieties of apple long famous in this vicinity, and still among the best, were named, one for him, "The Ben," sometimes known lately as the "Eustis apple," from our venerable pomologist who has introduced them to fame, and the other for her, "The Jehoaden." One of the early blacksmiths, Robert Ken, came from Salem and built his shop upon the common, near a small pond that was long called "Ken's Pond," which is now filled up. Rev. Richard Boun was a native of Newbury, and the ancestor of the Saltonstalls. The chairman of our Committee of Reception this day, Edward Mansfield, is a native of the County of Essex. This list might be greatly extended, if time would permit. We may mention in this connection that our town has made some returns for these early accessions, by sending back to Essex, from our successive generations, many valuable citizens, thus:—Rev. Elias Smith, the minister of Middleton, who was settled there in 1759, and was the ancestor of the Peabodys of Salem; William Poole of Danvers, the leather dresser, and ancestor of the respectable Poole family in Danvers and Peabody; Rev.

Samuel Batchelder, formerly minister of Haverhill, and others; the venerable Rev. Dr. Brown Emerson, now living at Salem, was of Wakefield descent, his grandfather, of the same name, having long been an eminent citizen of this place. Many other useful and prominent persons, including one or more among our visitors this day, have gone from this place to become inhabitants of Essex.

Another consideration in favor of visits like the present, is the intimate connection of this town with the County of Essex by means of railroad facilities. We are thus directly connected by three different lines of railroad, with at least four of the principal cities and many of the large towns of Essex, and indirectly with many other places in the County, so that our people, in their pursuits and interests, are becoming homogeneous with those of that County.

It is therefore not only suitable, but very pleasant, that a delegation from the heart of our mother County should pay this friendly visit to their suburbs. It is true we have nothing striking or wonderful to exhibit; no lofty mountains, majestic rivers or beautiful cascades; no quarries of marble or granite; no mines of coal, of silver or gold; no Pirate's Den or Devil's Rock or Dishful, or other wonderful curiosities; no famous battle or siege has rendered our territory historic, but the ashes of a hundred braves who fought for liberty in the war for independence, have made yonder cemetery sacred. Some of them were talented officers, and became subsequently influential and valuable citizens. We have some characteristics as a town, deserving of notice, and will refer to only one or two of them. Our town, like the ancient Mt. Zion, is beautiful for natural situation and scenery. Its centre, an undulating plain, with lovely lakes at each end,

"Where people oft do wander o'er
Their grassy banks and pebbled shore;"

on either side are swelling hills, from which may be seen in the distance, in one direction the deep blue sea, and in another the lofty summits of the mountains in New Hampshire; its soil is fertile, with an agreeable diversity of shady woodland and flowery meads all around its borders; few inland towns in the State exceeding it in the beauty of its natural scenery.

The central and convenient location is fortunate. It was said by Johnson the ancient Woburn historian, who wrote in 1651, that "Reading hath her foundation in the very centre of the country." She holds a similar position in reference to population and business, being surrounded with cities and populous towns, at convenient distances; for within a radius of some twelve or fifteen miles, are eight cities, many large towns, and nearly half a million of inhabitants. With these cities and towns she is connected by unusual railroad ac-

commodations. Art has added little to nature; we have few imposing public buildings or palatial residences, although the foundation of a spacious and beautiful building for municipal purposes has been laid. We have respectable church edifices, in which talent and learning minister; convenient school houses, where good schools are liberally supported and ably superintended; a public library of three or four thousand volumes; a flourishing agricultural and horticultural society, and various other social, industrial and moral associations. We have by estimation a population of above four thousand, and do an annual industrial business of more than \$2,000,000. Our numbers, resources and improvements, are increasing.

DANIEL ALLEN, Esq., of Wakefield, in response to a call from the chair, expressed his gratification at the visit of the Institute to the town, and eloquently spoke of the great perfection of the works of nature in comparison with man's handiwork. He spoke of the importance of these meetings as promotive not only of social feeling, but also of a higher degree of general culture and refinement.

Dr. GEO. B. LORING of Salem, gave some interesting reminiscences of the town as he remembered it, drawing a fine contrast between the schools of former days and those we find in Wakefield at the present time; and in other departments than that of education, he said, corresponding progress had been made.

Remarks were also made by Hon. P. H. SWEETSER, Rev. Dr. CHICKERING and Rev. Mr. BLISS of Wakefield, and Mr. E. N. WALTON of Salem.

On motion by Dr. A. H. JOHNSON, a vote of thanks was unanimously given to Messrs. Cyrus Wakefield, Edward Mansfield, J. D. Mansfield (President of the Wakefield Horticultural Society), Wm. Martin, Thomas Emerson, Eugene Emerson, Greeley Merrill, James Eustis, L. B. Evans, James F. Woodward, Richard Brittan, Stanley Dearborn, A. Bond, E. S. Upham, Deadman & Perkins, John G. Aborn, John White, S. Kingman, William H. Hutchinson, G. H. Sweetser, E. G. Mansfield, Daniel Allen, C. W. Eaton, H. A. Mansfield, J. H. Carter, W. G. Skinner, Mrs. Wakefield, Mrs. Hutchinson, the Misses Allen, and other ladies and gentlemen of Wakefield, for their kind attentions to the Institute during the day.

The meeting adjourned. On the way to the depot many of the members visited the elegant grounds of Mr. Wakefield, where nothing seems wanting which refined taste could suggest or wealth procure to render them attractive.

The Salem delegation reached home about six o'clock, having highly enjoyed the first Field Meeting of the year.

LETTERS ANNOUNCED.

(May and June.)

Adams, J. F. A., Pittsfield, May 15, 27, June 7; Batchelder, Jacob, Lynn, Apr. 28; Batcheller, J. B., Haverhill, May 3; Berlin, Die Gesellschaft Naturforschender Freunde, Jan. 18; Boardman, Samuel L., Augusta, Me., May 8, 19; Bordeaux, Société Linnéenne, Mch. 12, 17; Bryant, B. S., Boston, Apr. 1; Caller, James M., Apr. 23; Chever, S. A., Melrose, May 29; Clarke, S. A., & Co., Pittsburg, Pa., Apr. 27; Conant, W. P., Dalhoff, Mo., May 6; Dorchester, D., June 4; Drake, S. G., Boston, Apr. 22; Edinburgh, Royal Society, Jan. 7; Emery, G. E., Lynn, May 24; Felt, Charles W., Manchester, Eng., May 4; Gale, James, Haverhill, May 17; Goodell, A. C., May 7; Gottingen, Die Konigliche Gesellschaft der Wissenschaften, Jan.; Hall, B. H., Troy, N. Y., Apr. 28, May 10; Hewes, J. T., May 17; Jones, John P., Keytesville, Mo., May 24; King, D. Webster, Boston, Apr. 21, May 25; Kjoben-haven, Botaniske Forening, Sept. 21; Lackey, A., Haverhill, Apr. 29; Lincoln, Solomon, Boston, Apr. 26, 30; May 1; Loring, Francis W., Boston, June 1, 6; Loring, George B., May 15, 23; Maine Historical Society, Apr.; Manchester Literary and Philosophical Society, Nov. 11, 1868; Mann, Mary, Cambridge, May 26; Mannheim, Verein fur Naturkunde, Nov., 1868; New Bedford City Library, Apr. 26; Newhall, James R. Lynn, May 5; Newman, Edward, London, Mch. 10; Noyes, E. A., Portland, Me., Apr. 29; Osgood, Alfred, Newburyport, May 28; Paine, Nathaniel, Worcester, May 17; Palmer Charles, Ipswich Apr. 24; Pearson, Jona., Schenectady, N. Y., May 20; Peele, J. W., Boston, Apr. 20; Peirson, G. H., April 10; Pennsylvania Historical Society, Apr. 22; Pingree, T. P., Pittsfield, May 15, 24; Prairie Farmer, Chicago, Ill., May 5; Putnam, F. W., May 5; Rogers, Richard S., May 22; Slafter, Edmund F., Boston, Apr. 29; Smithsonian Institution, Washington, D. C., Apr. 3; Steiger, E., New York, Apr. 29; Stroud, G. D., Philadelphia, Penn., Apr.; Sullivan, E. R., Zanesville, O., May 4; Stickney, M. A., May 17; Stone, Benj. W., New York, May 5; Taunton Museum, Jan. 14; Tuckerman, J. Francis, May 24; Veatch, Charles, Keytesville, Mo., May 21; Verrill, A. E., New Haven, Conn., May 20; Warren, S. D., Boston, May 24; Woods, Henri N., Rockport, May 8.



ADDITIONS TO THE LIBRARY.

(May and June.)

BY DONATION.

ALLEN, J. FISKE. Boston Cultivator, 4 vols. folio. Miscellaneous Pamphlets, 25.
 BACHELDER, J. H. Massachusetts Legislative Documents for 1866, 1867, House 4 vols., Senate 4 vols. 8vo.
 BOSTON, CITY OF. Boston City Documents, 3 vols. 8vo, Boston, 1869.
 BUTLER, BENJ. F., M. C. Congressional Globe, 40th Congress, 2d session, 5 vols. 4to, Washington, 1868. Supplement to Congressional Globe, 40th Cong., 2d Sess., Trial of the President, 1 vol. 4to, Washington, 1868. Report of the Commissioner of Internal Revenue, 1 vol. 8vo, Washington, 1868. Report of the Secretary of the Treasury, 1 vol. 8vo, Washington, 1868. Commerce and Navigation of the U. S. for 1867. 1 vol. 8vo, Washington, 1868. Message and Documents, Navy Department, 1 vol. 8vo, Washington, 1868. Message and Documents, Post Office Department, 1 vol. 8vo, Washington, 1868. Civil Service of the U. S., 1 vol. 8vo.

Washington, 1868. Memorial Address on Life and Character of Thaddeus Stevens, 1 vol. 8vo, Washington, 1868. Act and Resolutions of U. S. of America, 1 vol. 8vo, Washington, 1868. Official Army Register for 1868, 12mo, pamph. Congressional Directory for the 40th Cong., 3d Sess. of U. S. of A., 8vo, pamph., Washington, 1869. Report on New York Election Frauds, 8vo, pamph., Washington, 1869. Mr. Maynard's Bill, read before U. S. House of Reps., Apr. 1, 1869, 8vo pamph.

CLEAVELAND, NEHEMIAH. The Nurse, a Poem, by Roscoe, 1 vol. 4to, Liverpool, 1798. Buttman's Grammar, 1 vol. 8vo, Andover, 1839. Mainwaring Classics, 1 vol. 8vo, London, 1737. Miscellaneous, 1 vol. 8vo. Military Journal from 1775 to 1783, 1 vol. 8vo, Boston, 1823. View of Maine, 1 vol. 8vo, Boston, 1816. Massachusetts Magazine, 1792, 1 vol. 8vo, Boston. Agricultural Papers, 1 vol. 12mo, Salem, 1796. Electra of Sophocles, 1 vol. 12mo, Boston, 1837. Education del Bello Sexo, 1 vol. 12mo. Miscellaneous pamphlets, 33.

CLEVELAND, H. W. S. The Public Grounds of Chicago, 8vo, pamph., Chicago, 1869.

COLE, Mrs. NANCY D. Miscellaneous pamphlets, 18.

CONGRESS LIBRARY, Washington, D. C. Catalogue of Books added to the Congress Library from Dec. 1, 1867 to Dec. 1, 1868, 1 vol. 4to, Washington, 1869.

DAVIS, CHARLES, of Beverly. R. B. Thomas' Farmers' Almanacs, 50 numbers.

DREER, J. FERDINAND, Philadelphia. Grand National Celebration of the Fiftieth Anniversary of American Odd Fellowship, at Academy of Music, Phila., Apr. 26, 1869, 8vo, pamph., Phila.

EMERY, SAMUEL. Duffie's Sermons, 2 vols. 8vo, New York, 1829. Trial of Friends at Steubenville, O., 1 vol. 8vo, Phila., 1829. Practical Philosophy, 1 vol. 8vo, Lansingburgh, 1805. Exposition of the Book of Job, 1 vol. 8vo, London, 1664. The Unsearchable Riches of Christ, 1 vol. 8vo. The Evangelist yet Evangelizing, 1 vol. 8vo, Dublin. Warden's Letters, 1 vol. 12mo, Phila., 1817. New Testament, 1 vol. 8vo, Boston, 1809. Poems, Moral, Sentimental, and Satirical, 1 vol. 8vo, Boston. War, 1 vol. 12mo, New Bedford, 1814. A Friendly Dialogue, 1 vol. 12mo, Newburyport, 1784. The Week's Preparation of the Sacrament, 1 vol. 12mo. Miscellaneous pamphlets, 41.

GOODRICH, JOHN Z., of Pittsfield. Proceedings at the Centennial Commemoration of the Organization of the Berkshire Association, 8vo, pamph., Boston, 1864.

GOODRICH, Mrs. J. Z., of Pittsfield. History of Stockbridge, by Miss E. F. Jones, 1 vol. 12mo, Springfield, 1854.

GOODWIN, W. F. Leavitt's Farmers' Almanac, for 1867, 1869, 2 pamph., 8vo, Concord.

GREEN, SAMUEL A., Boston. New York Insurance Reports for 1864, 1866, 1868, 4 vols. 8vo, Albany, 1864, etc. Miscellaneous pamphlets, 24.

HOWARD, CHARLES D., Peabody. Seventeenth Annual Report of the Trustees of the Peabody Institute, 8vo, pamph., Peabody.

JONES, JOHN P. Miscellaneous pamphlets, 8.

LEA, ISAAC, LL. D. Observations on the Genus Unio, 4to, pamph., Phila.

LEE, FRANCIS H. Massachusetts Register and U. S. Calendar for 1827, 1 vol. 16mo, Boston.

LEE, JOHN C. Commercial Bulletin for April, May and June, 1869.

LINCOLN. SOLOMON. Boston Directory for 1866, 1868, 2 vols. 8vo, Boston.

MACK, WILLIAM. Report of the Commissioner of Internal Revenue for 1867, 1868, 2 vols. 8vo, Washington, 1867, 1868. Miscellaneous pamphlets, 9.

MASSACHUSETTS STATE DEPARTMENT. Massachusetts Public Documents for 1866, Nos. 1-37, 4 vols. 8vo, Boston, 1867. Massachusetts Public Documents, for 1867, Nos. 1-38, 4 vols. 8vo, Boston, 1868. Acts and Resolves of the State of Massachusetts 1861, 1864, 1866, 1867, 5 vols. 8vo; Fourth Annual Report of the Board of State Charities, 1 vol. 8vo, Boston, 1868. Twenty-sixth Registration Report, 1

vol. 8vo, Boston, 1869. Bank Commissioners Reports for 1860, 1865, 1866, 1867, 1868, 5 pamph., 8vo.

MCCLEARY, SAMUEL F. Boston Municipal Register, 1 vol. 8vo, Boston, 1869.

NEWMAN, EDWARD. The Entomologist, vol. 3, 1 vol. 8vo, London, 1866, 1867. The Entomologist, vol. 4, 13 Nos., 8vo, London. The Zöologist, vol. 3, 12 Nos., 8vo, London.

NICHOLS, MISS LYDIA. The Port Folio, vols. 3, 4, 2 vols. 8vo, and 12 Nos. Miscellaneous pamphlets, 7.

PALFRAY, CHARLES W. Charter of the Province of Massachusetts Bay in New England, 1 vol. 8vo, Boston, 1759.

POORE, ALFRED. Annual Reports of the Towns of Groveland and Haverhill for 1869, 4 pamphs., 8vo.

QUARITCH, BERNARD. Catalogue of Works on Geography, Travels, etc., 8vo, pamph., London, 1869. Catalogue of Second Hand Books, 8vo, pamph., London, 1869.

SLAFTER, EDMUND F. The Assassination Plot in New York in 1776, 8vo, Boston, 1869.

SOUTHER, HENRY, of Philadelphia. Pennsylvania Archives, 12 vols. 8vo, Philadelphia, 1852. Colonial Records, 16 vols. 8vo, Philadelphia, 1852.

STONE, BENJ. W. New York Directory for 1864, 1 vol. 8vo, New York. Philadelphia Directory for 1868, 1869, 1 vol. 8vo, Phila., 1868. Boston Almanac and Directory for 1868, 1 vol. 12mo.

SUMNER, CHARLES, U. S. Senate. Speech of Hon. H. B. Anthony in U. S. Senate, Apr. 8, 1869, 8vo, Washington, 1869. Speech of Hon. C. Sumner in U. S. Senate, Apr. 13, 1869, 8vo, pamph., Washington, 1869. Speech of Hon. Z. Chandler in U. S. Senate, Apr. 19, 1869, 8vo, pamph.

TREASURY DEPARTMENT, Washington, D. C. Mineral Resources of the States and Territories West of the Rocky Mountains, 1 vol. 8vo, Washington, 1869.

WATERS, J. LINTON, Chicago. Chicago Live Stock Reporter for March, 1869. New Louisiana for April, 1869.

WATERS, THOMAS S. Massachusetts Legislative Documents for 1868, 3 vols. 8vo.

WORCESTER, F. Missionary Herald, 11 vols., 132 Nos. Home Missionary, 7 vols., 84 Nos. Hours at Home, 12 Nos. African Repository, 15 Nos. Theological Eclectic, 19 Nos. Church Reviews, 3 Nos. Miscellaneous pamphlets, 49.

YOUNG MEN'S ASSOCIATION, Buffalo. Thirty-third Annual Report of the Executive Committee, 8vo, pamph., Buffalo.

BY EXCHANGE.

AMERICAN SOCIAL SCIENCE ASSOCIATION. Journal containing the Transactions of the Association for June, 1869, 8vo, pamph., N. Y.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, vol. xii, sigs. 22, 23, 24, 25, 8vo, pamph., 1869.

BOWDOIN COLLEGE. The Bugle for June, 8vo, pamph., Lewiston, 1869.

DER ZOOLOGISCHE GARTEN. Zeitschrift für Beobachtung, Pflege und Zucht der Thiere. Herausgegeben von Dr. F. C. Noll, Jahrg. ix. Nos. 7 to 12 incl., 6 Nos., 8vo, Frankfurt, A. M., 1868.

ENTOMOLOGISCHEN VEREIN STETTIN. Entomologische Zeitung. Herausgegeben von dem entomologischen Vereine zu Stettin, 8vo, Stettin, 1868.

GEOLOGICAL AND POLYTECHNIC SOCIETY OF THE WEST RIDING OF YORKSHIRE, Proceedings of the, 1868, 8vo, pamph., 1869.

GESELLSCHAFT NATURFORSCHENDER FREUNDE. Sitzungs-Berichte der Gesell-

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. I. SALEM, MASS., JULY, AUGUST, 1869. Nos. 7, 8.

One Dollar a Year in Advance.

ORDER OF MEETINGS.

Field Meeting at Wenham, Friday, July 18, 1869. The meeting this day was largely attended, representatives from many Essex towns, and also from outside the County limits being present. As the early train reached Wenham, Messrs. James Bartlett, Rufus A. Dodge, and William B. Morgan were in waiting with carriages, which, with one or two others, were placed at the disposal of the party during the day.

Wenham, as in days of yore, is a pleasant town; it was called by John Dunton, in 1686, "a delicious paradise." "I would choose it," he writes, "above all other towns in America to dwell in. The lofty trees on each side are a sufficient shelter from the winds; and the warm sun so kindly ripens both the fruits and flowers as if the spring, the summer, and the autumn had agreed together to thrust winter out of doors."

The forenoon was spent in rambles about the town in search of the various interesting localities. The beautiful Wenham pond, so famous for its ice, and probably the only one of our charming little lakes, that has an European reputation, was visited by many—who sailed over its surface of some three hundred and twenty acres, and fished in its bright and cooling waters, where pickerel and other fish abound. The excellent apparatus for supplying Salem with water, attracted great attention, and many a commendation was spoken relative to these works, and the efficiency of those having them in charge. On a small hill that stood on the site of some ice houses near this pond,

since removed, was the place where the noted Hugh Peters, minister of Salem, preached the first sermon, this fine sheet of water being before him. The text selected for the occasion, was from John iii : 23. "In Enon, near to Salem, because there was much water there," and there has been much water there ever since.

The naturalists repaired to Pleasant Pond, and strolling on its banks found much of interest, and collected many specimens in botany and zoölogy. The extensive swampy land in this section of the town, lying contiguous to Danvers and Topsfield, has long been a favorite resort of the naturalist. The associations that cluster around these scenes are many and pleasant. Hither, in days long past, Cutler, Nichols, Oakes, Pickering, and others, would come for many of their choicest treasures.

Wenham was formerly a part of Salem, and the early settlers called the village "Enon." When the place was incorporated in 1643, it assumed its present name. The records were kindly shown to those who were interested in these subjects, and contained much valuable information respecting the town. In front of the Town House is placed the old stone guide-post, with its several compartments, which informs the traveller that it is, or was, 17 1-2 miles to N. (Newburyport), 20 1-2 to B. (Boston), 6 1-2 to I. (Ipswich), 9 1-2 to S. (Salem). It bears date 1710. The distance to Salem, if not to the other places, is now somewhat shortened. The old burial ground, about half a mile distant from the Town Hall, contains many interesting inscriptions. The oldest legible that was observed was that of "Sarah Fairfield, wife to Walter Fairfield, who died Dec. 18, 1710, in the 71st year of her age." The names of "Skipper Balch," 1714, "Freeborn Balch," 1729, also were noticed; and the name of Cue, a name not given in the elaborate Genealogical Dictionary of Hon. James Savage, appears in this connection: "Mrs. Elizabeth Cue, who died Feb. 15, 1726, in the 74th year of her age;" "Robert Cue, who died Sept. 26, 1795, aged 96." Elizabeth Cue was admitted to Wenham Church, April 24, 1698, Anna Cue in 1702, and Mary Cue 14, 4, 1719.

At one o'clock the various parties reassembled in the Town Hall to partake of the collation. At half-past two the meeting was called to order by the President.

The records of the preceding meeting were read and the correspondence and donations were announced.

The PRESIDENT made a few introductory remarks, alluding to the Field Meeting held in this place some eleven years since, and recalling some of the reminiscences of that occasion and several of the changes that have occurred during this interval.

Dr. GEORGE B. LORING being called upon, alluded to some of the characteristics of Wenham, and gave some interesting reminiscences

of its early history. He referred to a recent field meeting held at Stockbridge, under the auspices of the Natural History Section of the Pittsfield Young Men's Association, and stated that comparing the earliest dates of that town and of Wenham, he noticed that in former days it required something like a century for civilization to travel inland a distance of about a hundred and fifty miles; while now it requires only about a week to traverse a thousand miles.

Mr. E. S. MORSE spoke principally of the Glacier system as illustrated by the various boulders found in the vicinity, and the marks and scratches upon our rocks.

Mr. F. W. PUTNAM spoke on the classification of the several varieties of fresh-water fishes in the ponds, and pointed out the various methods that have been adopted by different naturalists. He called attention to the meeting of the American Association for the Advancement of Science, to be held at Salem during the next month.

Mr. WILLIAM H. DALL, who was recently attached to the Russian Telegraph Company through Alaska, gave an interesting account of the resources of that section, and said that the generally received impression of the severity of the climate there, was entirely erroneous; that at Sitka the climate was no more rigid than in this vicinity. In reply to a question by Mr. A. W. Dodge, he said, he considered the account of that territory given by Mr. Sumner, as unquestionably the most accurate that had been published.

Hon. A. W. DODGE of Hamilton, made some remarks on the power imparted by knowledge, and said he was looking for rapid scientific progress in the future.

Mr. NATHANIEL PAINE, President of the Worcester Lyceum and Natural History Society, expressed his gratification at being present at an Essex Institute Field Meeting, which he had highly enjoyed, and he hoped to meet representatives of the Essex Society at some of the meetings of the Worcester organization.

Mr. WILLIAM B. TRASK of Dorchester, and Rev. Mr. JOYSLIN also made interesting remarks of an historical character.

Some valuable donations of ancient documents were made to the Institute collections by Mr. SAMUEL PORTER, Chairman of the Selectmen. A handsomely mounted cane was exhibited, which bears the inscription, "J. Perkins, 1652," and which has remained in the Perkins family, located in the western part of Wenham.

The following resolution was unanimously adopted:

Resolved, That the thanks of the Essex Institute be presented to the Selectmen of the town of Wenham, for the use of the Town Hall to hold this meeting; also to Messrs. James Bartlett, William B. Morgan, Samuel Porter, Rufus A. Dodge, Wellington Poole, Nathaniel Gould and others of Wenham; Mr. Taylor of Boston; Mr. Henry W. Peabody of Salem; Messrs. Robinson, Whitman and Burbeck of Wenham, for kind attentions during the day.

Messrs. Byron Groce of Peabody, and Charles A. Beckford of Salem, were duly elected resident members.

Field Meeting at Middleton, Thursday, August 5, 1869. A Field Meeting was held this day at the Middleton Paper Mills, on the Salem and Lowell Railroad, a portion of these premises, by the kindness of the proprietors, Messrs. Stephen O. and Charles Crane, being placed at the disposal of the visitors.

On reaching the station, the company immediately entered the capacious drying room of the mill, which was the place of rendezvous. Here were deposited the baskets and other articles that were not immediately wanted, or that might prove cumbersome in the excursions about the neighborhood. The weather in the early part of the day was warm but cloudy, and this portion of the time was pleasantly spent in scientific and social rambles among the many delightful groves with which this secluded and eminently rural place abounds, or on the banks of the river and pond and other inviting localities. Numerous botanical and zoölogical specimens were obtained, but few of any great rarity.

At two o'clock P.M. the baskets were emptied and every one present partook of a substantial luncheon which proved a welcome feature of the day's proceedings.

At three o'clock the meeting was called to order by the President. The records of the preceding meeting were read. The correspondence and donations to the Library and Museum were announced.

The PRESIDENT, in introducing the literary exercises of the occasion, remarked that this place presents much of interest to the naturalist and to the lovers of the picturesque: its romantic dells, its beautiful groves, its rich meadows redolent with flowers of every hue, the river and the ponds with their peculiar flora and fauna, and the old mill with the simple and rural bridge across the never failing stream, are objects that always impart much beauty to the landscape.

The student of history cannot fail also to find many historical associations worthy of record; its history goes back to an early period. A recital of a few incidents may not be inappropriate and perhaps may not be devoid of interest. We are now assembled in the south-western corner of Middleton, about two miles from the village and about one-quarter of a mile, more or less, from Peabody on the one side, and Lynnfield and North Reading on one of the others; and within the limits of Salem, as it once was, and near the ancient north-western boundary, though at a considerable distance from the nearest bounds as at present located.

In 1636 it was determined that Salem bounds should extend from the meeting house six miles into the country, and this "six miles line" was afterwards ascertained to run from a point about one-fourth

of a mile above, or west of "Upton's Mills," and so on the same radius easterly across Ipswich River to Wenham.

March 13, 1638-9, the bounds between Lynn and Salem were to run from the sea to Humphrey's pond, and thence to six great Pine trees marked, called by the six men that laid out the bounds, "six men's bounds," and thence on the same line "so far as our bounds shall reach into the country." Two of the six men were Roger Conant and John Woodbury "the old planters." At this time all beyond seems to have been an almost boundless wilderness. In later records this was called "seven men's bounds." The bounds above named were located about forty rods south of the road from Lynnfield to Salem, and about a mile south of this place. In 1697 this road was called "Boston Path," and again in 1738 "old Path."

The highway across the river near the mills was laid out in 1738 from Reading line near the widow Phelps' through land of Nathaniel Phelps and Capt. Thomas Flint, and Samuel Flint "to the river between two brooks," then across the river to the land of John Buxton and Benjamin Russell and so to the former way.

The perambulation line between Reading and Salem from 1673 to 1715 began at "a small white oak on the south side of Ipswich River, near to John Phelps' house, which is the bound between Lynn and Salem." In 1715 it began at the white oak by the river above "Upton's Mills."

The first settlers, soon after their arrival, received grants of land, and cleared the same for farming purposes; the eligible sites on the several streams were improved for the erection of the saw, corn, or the fulling mill, these being essential for the convenience of the people.

In 1709, and probably some years before, there was a mill in this place called "Upton's Mill," and was owned by John Upton and John Buxton. In 1724 John Buxton conveyed to Ezekiel Upton a right to erect a fulling mill near the same place. It was owned in whole or part afterwards by John Flint and others.

On an old plan of lands in this vicinity, in the handwriting of Hon. Benjamin Lynde, jr., about 1750, this mill is designated as "Buxton's Mill." In the deed of conveyance of this property from John Flint to Francis Peabody of Salem, Feb. 25, 1832, it is mentioned "long known as Flint's Mills." Mr. Peabody immediately commenced the erection of buildings and the putting in of machinery for the manufacture of book and printing paper of the very best quality. In December, 1843, he sold the property to Zenas Crane, Luther Crane and Benjamin F. Martin, who continued the making of paper of various kinds. About ten years since, Mr. Stephen O. Crane took charge of the works and has continued the manufacture of paper, principally green curtain paper and the colored paper for handbills and posters.

The paper used by W. H. Prescott in the printing of the first edition of his history of Ferdinand and Isabella was made expressly for the work at this place, and was considered a very superior article. Here, as elsewhere in this county, on the old homesteads and cultivating the ancestral acres, reside several of the descendants of the original grantees, though many have migrated at successive periods and became identified with the places of their adoption as persons of influence and distinction in their respective occupations.

The raised turf and the simple slab which we noticed frequently in this section indicate the place where

“The rude forefathers of the hamlet sleep.”

Mr. E. S. MORSE, being called, mentioned that he devoted some time during the forenoon in examining the machinery in the mill (though at present owing to repairs not in operation), and presuming that some allusion to the process of manufacture might be appropriate, gave an account of the manufacture of paper, illustrating by black-board drawings the various operations through which rags or other materials pass. The various machines employed in this manufacture were also drawn and their operations explained. He said that frequently documents of great value had been found in the paper sent to the mills to be ground up, and sometimes coins and paper money had been found in the pockets of old garments in the “paper rags.” Our own people often destroy old cloths which might be of use in the paper manufactory, and hence the beggars of the old world were brought in to supply the deficiency. Italy did a large export business in this department. It not unfrequently happened that these imported rags were infected by disease; small pox had been thus communicated, and the operatives were obliged to use the greatest precaution.

Mr. F. W. PUTNAM announced that since the last meeting about twenty additions had been made to the Museum of the Institute, among which was a collection of African snakes from Sierra Leone, presented by Lieut. John B. Upton. He then gave a brief description of several fishes and other common specimens in zoölogy collected during the forenoon, explaining the distinguishing characteristics of the scaly and the smooth reptiles, the former retaining the same form from birth to old age, and the latter going through a series of transformations; the batrachians breathing by means of gills in their earlier stages. Frogs and toads have their tongues attached forward and reaching back, this construction being specially adapted to catching flies and insects for food. The Rattlesnake is the only poisonous reptile found in this county, and has poisonous fangs in the rear of the upper teeth, which if removed will form anew, hence some semi-domesticated rattlesnakes had become dangerous after the fangs had

once been taken out, and lives had thus been lost by bites from these reptiles kept for exhibition. He also alluded to the pickerel and described the difference existing in species found in various localities. He also explained the formation of galls on the willow and other trees, by the insect depositing its eggs in an incision in the bark. A caterpillar of peculiar construction was described as being the larva of the saw-fly.

M. FERDINAND BOCHER, Professor in the Massachusetts Institute of Technology, spoke of the beneficial combination of science and literature, giving some amusing illustrations of what he called the scientific and unscientific methods of teaching languages. Language he claimed was an important element of history, and the peculiarities of language threw much light upon history. Facts should be the foundation of theories, and not the deductions from them.

Mr. E. W. BUSWELL, Treasurer and Corresponding Secretary of the Massachusetts Horticultural Society, spoke of Field Meetings as an important auxiliary in carrying forward the peculiar work of such organizations as the Essex Institute.

Rev. G. A. POLLARD, late of the Erzroom Mission, alluded to the remark of Prof. Bocher relative to history being learned from languages, and gave some striking illustrations that had come under his own observation. He also gave an interesting account of the people with whom he formerly labored, alluding to the commonly received belief of their origin, tracing back as far as a grandson of the patriarch Noah.

The following resolution, proposed by Mr. E. N. WALTON of Salem, was unanimously adopted.

Resolved, That the thanks of the Institute are due to Messrs. James Flint, S. O. and C. Crane, Abiel and Charles H. Hayward and others, for their successful efforts to render the meeting interesting.

After a pleasant visit to the excellent farm of Mr. Flint (a brother of the Secretary of the State Board of Agriculture) the company took the cars for home, well pleased with the exercises of the day.

Field Meeting at Rockport, Thursday, August, 26, 1869. The meeting at the Pavilion Grounds, Pigeon Cove, Rockport, this day, was attended by a large number of the members of the American Association for the Advancement of Science, which closed its sessions in Salem on the day preceding. The greater part of the company was accommodated on an extra train which left Salem at nine o'clock in the forenoon, although the morning and noon trains brought a considerable accession. The great interest that had been awakened by the recent meetings of the Association induced an unprecedented number of persons to join in the excursion, and thus somewhat deranged the plans of the citizens of Rockport, who were not prepared to receive so large a delegation.

Leaving the Railroad Station at Rockport, the party proceeded to the grounds selected for the meeting, about two miles distant, passing through the village of Pigeon Cove, and along the New Atlantic Avenue, recently built by Mr. E. B. Phillips; this avenue leaves the main road near the school house, and winds along in full view of the ocean, to the Pine Groves at Halibut Point; it is quite level, and graded up with coarse gravel, forming one of the finest drives upon the Cape, and will doubtless, at no distant day, be occupied by dwelling houses, and summer resorts. At this point—a rocky promontory overlooking the open sea and agreeably shaded by scrub oaks—a commodious marquee had been put up, which was the headquarters for the day, and in which the luncheon baskets were soon deposited, and the company separated into small parties for exploration, as inclination dictated. Some made explorations into the interior in pursuit of specimens, while others rambled along the shore, or visited the quarries to obtain geological specimens. A little further on, rising above another grove on an eminence, is a rude observatory, from the top of which an extensive view is obtained. Still further on, are all the attractions of a broken seashore, with shelving rocks and dashing waves. The promontory commands an uninterrupted prospect of the broad Atlantic, studded with passing sails; the distant fishing fleet clustered together in the offing; Portsmouth, Rye, the Isles of Shoals far to the north, and the nearer shores of Essex, and Newburyport, in the same direction; Rockport, the white light of Cape Ann, and the chimney like night beacons on Thatcher's Island.

The most prominent features of the town were the frequent quarries of granite, in most of which numbers of men and teams of oxen were busily engaged in transporting stone to the coast, for the purpose of forming breakwaters, in order to afford safe harborage for vessels.

At one o'clock the scattered forces were called in, and after partaking of the repast, the meeting was called to order by the President. The Secretary being absent, Mr. N. A. HORTON was requested to act as Secretary for the day. Records were read; correspondence and donations announced.

The PRESIDENT gave a brief sketch of the locality, and traced the origin and growth of the Field Meetings; he also alluded to the objects of interest passed on the journey from Salem to Rockport, including in his remarks the discovery of the Magnolia in the woods of Gloucester.

Dr. G. B. LORING, as chairman of the field committee, addressed the audience, and remarked that he had great pleasure in reminding the eminent men of science, then present, that they stood on the great historic spot of Massachusetts, and almost the historic spot of the

United States. Old Essex County! what had it not done for theology, art, science and the great business of life!

He then adverted in earnest and eloquent terms to the many men of mark and eminence born in Essex County, specially mentioning Peters, Stewart, Woods, Timothy Pickering, Rufus Choate, Jonathan Jackson, Pickman, Peabody, Hawthorne, Prescott, and others. It was these men who had given Essex her distinction, and it was these men whom the present generation were striving to follow, although with unequal steps. Their influence, however, still lived and stirred the rising generation. Essex County, too, had established, for the first time, the plan of Field Meetings. Let not scientific men smile; let them rather come down from their high pedestal of science, and open their treasures of learning to the people, so that science might become practical as well as theoretical, and thus elevate the people, improve the art of living, and perfect the system of government. It was the union of the practical with the scientific which really educated mankind and made the man of science useful. In regard to farming he would say that agriculture in Massachusetts would never be developed to its proper standard until science shed its light upon it. Scientific men should not argue, as he had noticed in one of the finest papers read at the late meeting, that the reduction of science to practice was what no scientific man could bear. Rather let scientific men, if they dare do it, put their facts before the people, and let the people sit in judgment on them. Then science would render its full and perfect service to mankind, and the people would then follow their great scientific leaders. For this Institute and for its self-sacrificing president, he claimed all the honors which science could bestow, for in them science had been joined to the popular heart. He concluded with an allusion to Professor Peirce, who was a son of Essex, and who, as the great American mathematician, had rendered his name and country illustrious.

Mr. EDWARD S. MORSE of Salem, followed in a statement of the peculiarities of the locality of the meeting, and of what living specimens could there be found. He said that one of the main objects of collecting specimens was to elucidate the principles of classification. It seemed to him that if the church three hundred years ago had been as honest as science is to-day, the world would not be so blinded with superstition as it is. Science, by basing its deductions on facts and on the nature of things, and by making predictions which came true, had removed many of the dogmas of ignorance and superstition. He denounced the practice of apologizing for the study of science, by saying that it would pay, and enable us to raise better crops, etc. That was merely a bread and butter argument. Science and nature should be studied for the sake of truth. He then alluded to the importance

of chemically and geologically examining aerolites with a view to determine whether other worlds were inhabited. Aerolites, which were fragments of bodies passing through space, or portions of planets, were of two kinds,—one metallic, and the other sandstone. Imagine the immense importance of finding in these aerolites a particle of a scale or any other traces of organic life? So regular and interdependent were the laws of nature, that such a discovery, if really made, would determine the question as to whether other worlds were inhabited.

Colonel J. W. FOSTER of Chicago, next addressed the meeting. In a lucid and able speech, he contrasted the geology of the east and the west, and described the geological features and characteristics of the United States, taking the valley of the Mississippi as the starting place of observation. After further alluding to these points, he said that although Massachusetts was the first State that was geologically surveyed, yet it was to be regretted that it was still almost a blank in geological science. They knew little of those rocks in Massachusetts which had been so long subjected to igneous agency. He thought, however, that in a few years a solution of all difficulties would be effected.

Probably they would find that in the igneous rocks of Nahant they had the Devonian shales of the West. Sir William Logan, and a corps of able assistants, were about to investigate these matters.

Professor T. STERRY HUNT of Canada, gave a geological description and history of the New England granite formation. The investigation of the last twenty years had gone very far to destroy the commonly received notion that granite was the foundation of all other rocks. They were beginning to learn that instead of the granites being the substrata of the globe, they were rather secondary and derived rocks,—that they were once great beds of gravel or sandstone which had subsequently become crystallized. After speaking of the probable age of New England granites, Professor Hunt said that in walking along the shore at Rockport, he could see that the granites were distinctly stratified with alternations of sandstone at different periods. This clearly showed their sedimentary origin, and probably identified them as being the same as the granites north and south, and thus enabled them to class them among the Devonian rocks. Perhaps ten thousand or fifteen thousand feet beneath them might be beds holding fossils of the Silurian type,—the same beds, perhaps, as those cropping out at Braintree. As compared with the rocks at Braintree, the granites probably were of very recent origin. From careful analysis it was ascertained that the Rockport granite contained traces of living organisms. He would mention that with reference to aerolites, chemists had found in them traces which by

them were regarded as certain evidence of the remains of organic life.

Professor BENJAMIN PEIRCE, Superintendent of the U. S. Coast Survey, of Cambridge, was introduced as a native of Salem, and he made a speech full of love for his early home, and recounted many reminiscences of his youthful days, that revived in the minds of his old townfolks and former playmates of both sexes, pleasant memories of the years that have passed. He deservedly complimented Professor Agassiz, whose absence was regretted, by saying that his heart was in his work, which was the secret of his great success. He believed that whatever a man did that was worth doing, he did it not so much from his head as from his heart. Many men of great intellect failed because they lacked heart. Without heart there was a want of faith, and then great thoughts often refused to enter in.

He then paid a tribute to the memories of Dr. Bowditch, Prescott, Page and Pickman. He had great pleasure in laying the last results of his labors at the feet of his maternal city—Salem. He had that day signed a paper for the establishment of a light in Salem harbor, which had been first surveyed by Dr. Bowditch.

Rev. Z. A. Mudge of Marblehead, and Professor F. Bocher of Wenham, were duly elected resident members.

Voted, That the thanks of the Essex Institute be presented to Mr. F. B. Phillips for the use of the grounds, to Mr. George Babson for the use of the tent and for other attentions, and to the Superintendent and Officers of the Eastern Railroad Corporation, for courtesies.

LETTERS ANNOUNCED.

(July and August.)

Allen, George N., Oberlin, O., June 10; American Philosophical Society, Phila., Pa., June 26; Baker, C. Alice, Cambridge, July 13; Bocher, Ferdinand, Wenham, Aug. 12; Boston Public Library, July 16, 23; Boston Society of Natural History, July 24; Bruxelles Academie Royale, July 8; Bumstead, F. J., New York, June 13; Butterfield, W. Webster, Indianapolis, Ind., July 28; Challen, Howard, Phila., Pa., July 19, Aug. 24; Cheney, T. Apoleon, Watkins, N. Y., July 12; Chever, S. A., Melrose, June 16; Chipman, R. Mannitg, East Granby, Conn., June 22, Aug. 2; Crane, C. H., Washington, D. C., July 29; Danzig, Die Naturforschende Gesellschaft, Nov. 30; Dodge, A. W., July 19, 29; Fellowes, R. S., New Haven, Conn., Aug. 23; Gregory, James J. H., Marblehead, Aug. 12; Hanaford, Mrs. P. A., Hingham, July; Huntington, D. B., Salt Lake City, Utah, Aug. 10; Ives, Robert H., June 26; Johnson, Mrs. Lucy P., July; Joslin, Ellen L., Leominster, Aug. 1; Lackey, A., Haverhill, June 10; Lesley, J. P., Phila., Pa., June 26; Lockyer, J. Norman, London, Eng., Aug. 2; Loring, F. W., Boston, July 14; Lünenburg, Der Naturwissenschaftliche Verein, Feb. 23; Mann, Mary, Cambridge, June 9, 15; Mudge, Z. A., Marblehead, Aug. 11; München, Das Bibliothekariat, May 6; Nation, New York, July 1; New England Historic-Genealogical Society, Boston, Aug.

13; Nott, Eliphalet, Portland, Me., July 6; Osgood, Charles, Jr., Lynn, June 24; Paine, Nathaniel, Worcester, July 10, 27; Prescott, J., Boston, July 7, 8; Rothrock, J. T., Centre Co., Pa., June 16, Aug. 5; Sheldon & Co., New York, June 12; Snelling, S. G., Boston, July 10; Stone, Benj. W., July 29; Stone, William, Providence, R. I., Aug. 4; Warren, S. D., Boston, July 24; Wiggin, J. K., Boston, Aug. 9; Williams, H. L., Rockport, Aug. 25; Winsor, J., Boston, July 8, 16, 23; Zaba, N. F., Boston, Aug. 24.

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(July and August.)

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BULLETIN

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One Dollar a Year in Advance.

NOTICE OF THE TEMPERANCE ORGANIZATIONS IN SALEM.

BY DAVID R. PEABODY.

IN the accompanying paper it is the intention of the writer to give a brief history of the several temperance organizations which have appeared in this city, commencing with the Washingtonian movement.

On the 5th of April, 1840, six persons inaugurated, in the city of Baltimore, the Washington Temperance Society. These men were from among those who were daily in the habitual use of intoxicating liquors to excess. To whatever may be attributed the motive which induced them to break loose from the fetters of intemperance which so long had bound them, certain it is they were the progenitors of one of the greatest moral movements of the age; and the enthusiasm with which this was greeted, in a short time extended to nearly every city, town and village in the land.

The Washington Total Abstinence Society of this city was organized on the 9th of June, 1841, in a small hall on the lower floor, in Mechanic Hall building. Subse-

quently it moved to a hall in Washington street, known as Washington Hall. While here, the hall was kept open daily for the use of its members; weekly evening meetings were held and hundreds came forward and signed the pledge. It continued in a vigorous existence for three or four years, when the interest began to abate, and in 1847 it may be said to have died out.

In connection with this organization was the Martha Washington Society, which held its meetings Wednesday afternoons of each week, in the hall of the W. T. A. Society; but this organization did not exist so long as the other society.

In the latter part of the year 1843, there was organized a society known as the Young Men's Temperance Society. This was upon the same general principles as the Washingtonian Society. Their meetings were held in the lower hall, in Mechanic Hall building, but subsequently they removed to rooms in the Bowker building. This society continued about one or two years.

Growing out of the Washingtonian movement, from a desire for some more permanent organization, were brought into existence those organizations known as secret temperance societies.

The Order of the Sons of Temperance was organized in the city of New York, Sept. 16th, 1842. On the 23d of February, 1844, Henfield Division, No. 2, of this city, was instituted; and it is the only institution of so long standing, which has withstood the vicissitudes of the day. As a temperance organization, it always has been an energetic, working association. Salem Division was an offshoot from Henfield, and was organized in 1846, and continued about two years. Young Men's Division was organized in 1859. This division surrendered its charter in 1865.

Phillips Division was organized Feb. 15th, 1859, and Abraham Lincoln Division Feb. 3d, 1866; they are both now in existence. These two divisions admit ladies as members.

Connected with the Sons of Temperance, it would, perhaps, be proper to notice the Daughters of Temperance, although these organizations have not been in existence for several years, owing to the admission of ladies into other temperance organizations; yet in their day they were a useful auxiliary in the temperance cause. The Independent Division, and the Zephyr Union Daughters of Temperance, were early organized, and contained during their existence, many true and faithful workers in the cause of temperance; some of whom have transferred their labors to other organizations, where they assist to give them life and energy.

In 1859 an organization was formed called the Social Council. This organization was intended to unite more fully the efforts of the Sons and Daughters of Temperance in a united organization, requiring membership in them to secure membership in this. Subsequently it became independent, and admitted members without these restrictions. After an existence of about two years it was disbanded.

In 1855 members of the Sons of Temperance in New York being desirous to cement stronger the bonds of friendship, organized the Temple of Honor. This was intended to be connected with the Sons of Temperance, requiring membership in that order to secure membership in this; but after several years of unsuccessful attempt to have it an acknowledged branch of the Sons of Temperance it came out an independent order. This organization is different from all others, inasmuch as it may really be called a secret organization, as it has de-

grees, grips, signs, etc. It is not intended as a reformatory organization but to cement in a bond of brotherhood those who desire to pledge themselves to a life of temperance. Under this organization, Essex Temple was instituted April 6, 1856. It retained its organization for six or seven years, and then surrendered its charter. Subsequently, after a year or two, it recalled it, but again in a few months surrendered it. No organization of this kind again existed until Nov. 23, 1866, when Meteoric Temple of Honor was instituted. This organization is now in existence.

In 1848, members of the Henfield Division desiring to do something for the rising generation, an organization was formed known as the Cadets of Temperance. This association admitted youths between the ages of twelve and eighteen, and in addition to the temperance pledge there was an anti-tobacco pledge. Quite a large number of youths were connected with this organization, which remained in existence about three years.

At the time of the organization of the Sons of Temperance there was another order, which, during its existence, held a prominent position as a temperance organization, known as the Independent Order of Rechabites. This order was established in this city, in the year 1844, by instituting Naumkeag Tent. This tent grew so rapidly it was found advisable, in a short time, to open a second tent, which was called Ocean Tent. There was also a tent of the Daughters of Rechab, which worked as an auxiliary to the brothers. This organization was very vigorous in its growth, and did a great amount of good while in existence. After a few years it lost its influence, and finally died in five or six years.

The advent in this country of that apostle of temperance, Father Matthew, brought into the temperance ref-

ormation a class of persons whom no other means had reached. By the efforts of Henfield Division he was introduced into this city in the year 1848. Among the results of his mission here was the organization of the Father Matthew Temperance Society. This society held weekly meetings, on alternate months, in the chapels of the St. Mary's and St. James churches, and embraced at times a very large number of members. It continued in existence until about 1863 when it was disbanded.

In 1851 there was an organization called the Temperance Watchmen. The object more particularly of this association was the enforcement of the prohibitory law. Some of the members were prominent in the attempt in this city, to the early enforcement of the law. After a year or two of existence it disbanded.

On the 19th of Oct., 1857, was organized the Young Men's Catholic Temperance Society. This association exercises a salutary influence among its many friends. They have a large library, and their rooms are open evenings for the benefit of its members.

Peter Sinclair, a native of Scotland, came to this country on a temperance mission, more particularly among children; among whom he organized societies called Bands of Hope. Under the auspices of Henfield Division he lectured in Mechanic Hall on the afternoon of the 23d of February, 1858, to a crowded hall of children. The result of this lecture was the organization of Bands of Hope in every Sabbath School in the city. This, like many other organizations, after a lapse of two or three years was dissolved.

In the western states the temperance men wishing an organization which would unite more fully the influence of men and women in the temperance cause, and believing that an organization where all could be admitted on equal terms would meet with beneficial result, organized

on this basis the Order of Good Templars. On February 5th, 1862, Minnehaha Lodge was instituted; and on the 23d of March, 1866, Siloam Lodge was instituted in this city. This is a separate organization from all others, but there are members who are connected not only with this but also with the Sons of Temperance and Temple of Honor.

In January, 1867, an organization was instituted in this city called the Young Men's Temperance Volunteers, which name was subsequently changed to the Band of Hope. The primary object of this organization is "the temperance education of the children and youth of this country." This organization is under the charge of a board of directors. Each of the organizations of Sons of Temperance, Good Templars, and Temple of Honor appointing three, and they also contribute something towards its maintenance. Its meetings are held weekly, and are made quite entertaining and instructive.

At the present time (February 1st) there are in operation in this city the following temperance organizations:

SONS OF TEMPERANCE.

Henfield Division, numbering 240 members.

Phillips Division, numbering 120 members.

Abraham Lincoln Division, numbering 76 members.

GOOD TEMPLARS.

Minnehaha Lodge, numbering 146 members.

Siloam Lodge, numbering 97 members.

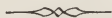
TEMPLE OF HONOR.

Meteoric Temple, numbering 60 members.

Young Men's Catholic Temperance Society, numbering 150 members.

Band of Hope, numbering 150 members.

The whole amount of benefit which has been derived, during the past twenty-seven years, by the existence of these several temperance organizations it is difficult to determine. Certain it is that there are many who have been reformed, which, had it not been for these or some similar organization, instead of reforming and leading a life of temperance, would have filled a drunkard's grave. Some have adhered to the pledge for a longer or shorter period of time, and then fallen. Yet for these, the time they were connected with these organizations, was so much of a life of happiness not to themselves alone but to all with whom they were connected, that it will always remain like the oasis in the desert, bright spots in their desert life.



FIRE CLUBS.

ASSOCIATIONS bearing this name have existed in Salem since 1744. Many important advantages result therefrom, affording relief and security to the persons and property of each other, when in danger by fire and promoting harmony and good fellowship among the members. The organizations of all were similar, each member was required to have two substantial leather buckets, usually twelve inches in length and eight in diameter, painted with the device and name of the club. In one of the buckets was kept a bag made of Raven's duck, four feet long, two feet three inches broad, marked with the owner's name; also a bed key. Most of the clubs had ladders—some two—each thirty-four feet long, kept in different places for their use; some had four. The meetings were held quarterly, one of which was the annual, for the choice of officers, etc. Members were required to repair to the house of any of their associates who may

have any property in danger from fire, and assist in the preservation of the same, and take their buckets with them, to be used in passing water from the cistern to the engines. The introduction of hose, improvements in the structure of fire engines, and more latterly an abundant supply of water by means of hydrants, etc., have superseded many of the old modes then in use, and greatly remodelled the system of management at fires.

The number of members were limited, some having only twenty-five, some sixty, and others between the above named numbers.

The following facts have been obtained respecting the organization of the following clubs. Many of these have been disbanded; some were of short duration, whilst others continued for many years. The number of members were changed in some, and modifications in the By-laws to conform with the attending circumstances.

Names.	Date of Organization.	Number of Members.
Old Fire Club,	Mch. —, 1744,	25
Union Fire Club,	Sept. 13, 1770,	30
Social Fire Club,	Oct. 21, 1774,	35
Number Five Fire Club, . . .	Dec. 8, 1783,	35
Social Fire Club,	Nov. 10, 1793,	35
Amity Fire Club,	1796.	
Relief Fire Club,	June 24, 1803,	35
Washington Fire Club, . . .	Oct. 10, 1803.	
Adroit Fire Club,	Feb. 19, 1806.	
Active Fire Club,	Feb. 20, 1806,	60
Hamilton Fire Club,	Dec. —, 1809,	40
Enterprise Fire Club,	Dec. 3, 1810.	
Union and Amity Fire Club, .	Mch. 12, 1812,	36
Volant Fire Club,	Jan. —, 1816,	40
Adroit Fire Club,	June —, 1831.	
Naumkeag Fire Club,	Aug. —, 1832,	60
Boston Street Fire Club.		
Sons of Temperance Fire Club.		
Alert Social Fire Club.		
Social Fire Club.		

Field Meeting at Lynn, Thursday, Sept. 23, 1869. The last Field Meeting for the season was attended at Lynn by a pleasant though not very large company of ladies and gentlemen from the neighboring towns, who at about 10, A. M., arrived from various points and rendezvoused at the Boston street Methodist Church. Some uncertainties of weather had kept back a portion of those who intended to be present, but the day, as it proved, was wholly clear and unexceptionable; in fact, one of the pleasantest of the season.

Soon after arrival the company were distributed into excursion parties and set off in diverse directions. A full list of noteworthy localities had been prepared and circulated, by the aid of which some turned their attention to the old shell-beds located in Rocks Pasture; others struck out for Breed's Pond and similarly attractive waters; while others gratified themselves by a stroll on the nearer hills, or a walk through the fine gardens of some of the citizens of the vicinity. But the greater part of the company, availing themselves of the carriages in waiting, took passage for Dungeon Rock, and spent some hours among the rustic beauties of that sylvan locality. The Marbles, father and son, have been blasting the rock since 1852, and have succeeded in making a circuitous cave downwards, about one hundred and fifty feet in length and from eight to ten feet in width and height, "under direction of the spirits."

The new City Hall was also visited. This is one of the finest, if not the finest, in the State, outside of Boston, for municipal purposes; the arrangements for the accommodation of the different boards and the several officers are admirable. Convenient and suitable rooms are also provided for the Public Library, which, under the management of the present accomplished librarian, Mr. Jacob Batchelder, is in a good condition, and the numerous and valuable additions will ere long place it among the first-class libraries.

This building is conveniently located on Park square, at the junction of North Common, Market and Essex streets. It is built in the Italian Renaissance style, which, from the great variety of outline that it admits of, and the multiplicity of parts required, is one admirably suited to the wants and uses of a great public building. The exterior walls are of pressed brick, with the basement, entablatures, and other architectural details, of Connecticut brown freestone. The corner stone was laid November 28, 1865, and the dedication took place November 30, 1867, with appropriate ceremonies.

The Western Burying Ground, opposite the Lynn Hotel, and the old records in the City Hall, afforded much material for the student in local history.

This part of Lynn was early settled. The place of meeting is on the old Boston road (now called Boston street), over which our fath-

ers travelled many years before the present more convenient avenues to the metropolis were opened. Several of the houses observed this day were built during the seventeenth and the first half of the eighteenth centuries, with the old oaken frames common at that period. They appear strong and substantial, and without doubt will outlast many of those of a more recent construction. These old buildings are always pleasant to behold, the reminders of those early days when our fathers first settled this territory and laid the foundation upon which has been reared the present structure of society with the various institutions and surroundings.

Between one and two, P. M., the excursionists having returned to headquarters, found an agreeable *répast* prepared by the ladies in one of the rooms in the basement of the church, which was enjoyed by all with much satisfaction.

At half-past two, P. M., the formal meeting was called to order in the vestry, the President in the chair.

In the absence of the Secretary, Mr. F. W. PUTNAM was requested to act as Secretary for the day.

The records of the preceding meeting were read and the correspondence and donations announced.

Among the letters was one from Miss SARAH K. HAYES of Haverhill, accompanying a large and valuable collection of shells, principally fluviatile species from the western states, bequeathed by the late JOHN BARTLETT of Haverhill, who made the collection while a resident in Columbus, Ohio, for many years.

Mr. A. C. GOODELL jr., of Salem, was called upon, and devoted his remarks principally to the story which attaches to Dungeon Rock, expressing grave doubts whether any pirate's cave ever existed there, and whether such a man as Thomas Veal ever lived. There were no records extant, no evidence to confirm the tradition which attaches to that locality. He had no faith in the stories of buried treasure there or elsewhere. As to the "ancient weapons" found in the rock, there was undoubted evidence that they were of modern origin, and placed there by practical jokers. In reply to a question asked by Mr. S. C. Bancroft of Peabody, he said that his own examinations had convinced him that Mr. Marble was blasting into solid rock, and there was nothing to lead to the conclusion that a cave had ever existed there. Formerly there was a slight opening, and the rock had evidently fallen down somewhat, but a cave sufficient for the concealment of any number of men, was almost an impossibility. He drew from these facts a lesson showing the importance of basing all scientific investigation upon facts. These should first be secured, and the rest is easy. There is no other way to avoid error and difficulty.

Mr. S. D. POOLE of Lynn, gave an interesting account of Dungeon

Rock as he remembered it many years ago. There was once quite an excavation into the rock, so that a man could crawl in nearly out of sight. On the 4th of July, 1834, a party of men from Saugus, he believed, placed twenty-five pounds of powder in this excavation, stopped up its mouth, set a train and fired the powder. The explosion materially changed the appearance of the rock, and opened a fissure four feet wide, which was only one foot before. A bushel of snakes, it was said, was blown out at the time, and the scene was quite exciting. The Hutchinsons once made an attempt to dig for treasure there, but soon desisted. The later operations have not been altogether a delusion, as the prosecutor has made a good living out of it.

MR. JACOB BATCHELDER of Lynn, told of an excitement created many years ago, by some parties from Lynnfield who went to Dungeon Rock to search for treasure. It was reported that a chest had been found there which contained thirty thousand dollars in coin. One lady said she had seen another lady who heard that another lady had seen the chest, which was all covered with rust, in the wagon. But it turned out that she had only seen a wagon that looked as though it had a rusty box in it. One young man, however, reported that he had got the money, and on the strength of it he cut quite a dash for a time, with a horse and carriage and other extravagances. When, however, he failed to pay his bills, his credit suffered and the humbug was exposed. Mr. B. said he had no great faith in the stories about Dungeon Rock, but he should regret to lose the romance that lingers around that and kindred localities on that account. Perhaps these old legends should not be dissipated too rudely, for much that we call history rests on no better basis.

MR. F. W. PUTNAM of Salem, made some interesting statements relating to the exploration of the shellheaps at Eagle Island in Ipswich and on Plum Island. He further recounted the works of the party who had been digging in Rocks Pasture. In this somewhat extensive bed of shells and mould, covering an area of one-fourth of an acre, a few inches in thickness, just beneath the sod, they had found to-day the shells of the quahaug, common clam, great clam, cockle and scallop; also bits of charcoal and burnt stone. Two stone arrowheads had turned up, with an implement of sharpened bone, like a bodkin. Some fragments of pottery were found, also many bones, mostly those of the red deer, but some perhaps of the moose, and others of birds. A tooth of a small cetacean was found. Mr. P. further discussed the discoveries made in these explorations, in their bearing on the age of prehistoric man.

DR. J. M. NYE of Lynn, expressed his satisfaction at the course of this and other meetings of the kind. He thought their influence on

the young, particularly in exciting the power of observation and in encouraging the practice of drawing, must be of great benefit in the community.

Mr. JACOB BATCHELDER of Lynn, in response to an enquiry, gave the following brief history of the old Lynn Academy:

THE OLD LYNN ACADEMY, an institution associated with so many agreeable reminiscences of our citizens well advanced in years, had its origin in the desire of several public spirited individuals, to furnish a course of instruction in the branches not taught in the common schools. They made the estimates of the amount required to carry out their design, formed a stock company, purchased a lot of land on the street south of the common, erected and furnished a building with a tower and bell, after the usual pattern of the New England Academy, fixed the price of tuition with a small sum added for rent, and offered the premises to a teacher willing to test the experiment.

The school was opened in 1805, under the superintendence of Mr. William Ballard, who entered on his labors with enthusiasm, which, in six months was so much abated, that he yielded his office to Mr. Francis Moore, who was, however, scarcely more successful; for at the end of one year he met and welcomed to his vacant chair, "the coming man," in the person of Mr. Hosea Hildreth, afterwards the pastor of a parish in Gloucester. Determined to sustain his bark amid the eddies and currents of an ebbing tide, Mr. Hildreth had recourse to a political life preserver; and on the 4th of July, 1806, delivered an oration to the Federalists in the first Congregational meeting house, followed by a dinner in the hall of the Academy; while the Democrats engaged in similar recreation at the hotel. This expedient was so far successful as to carry him safely through the year.

- His successor, Mr. Abiel Chandler, restored the six months' régime and was relieved by Mr. Abner Loring, who next year gave way to Mr. Samuel Newell, whose feeble health constrained him, at the close of the year 1808, to relinquish a profitless and exacting pursuit; a decision doubtless promotive of his own usefulness and fame, for he subsequently engaged with ardor in the cause of foreign missions, and, with his wife, the celebrated Harriet Newell, has left a glorious record of faithful devotion to his chosen work,

This rotation of teachers continued, often with many months' vacation, until the year 1835, when he who now addresses you succeeded one who had just finished the normal term of six months — and, with varying fortunes, witnessed the rising and the falling tides till the year 1849, when the establishment of the public high school closed the scene of struggle and toil and varying fortunes of the Lynn Academy.

The land on which the building stood has become a part of the garden of David Taylor, Esq.; the apparatus and library have been sold or distributed; the building has been removed to Main street, opposite the Lynn Hotel; the pine desks, somewhat elaborately carved, were used by the carpenter for purposes, in which planing was dispensed with; the chairs, with understandings impaired by hard study, were sold or stored; the eagle which surmounted the little tower is in possession of Trevett M. Rhodes, Esq., and the bell is reserved as an heirloom of the graduates of the institution.

Notwithstanding the disadvantages of its mode of organization, many excellent scholars were in that school prepared for college and for the higher pursuits in life, and all who have been in any manner identified with its interests, regret the necessity of its extinction.

The CHAIR, in speaking of his visit to a garden in this place alluded to the great change in horticultural tastes within a few years past. Plants and flowers that were great favorites thirty years ago, are now hard to find. He mentioned that a few weeks since he wished to obtain a specimen of the curled leaved mallows, *Malva crinita*, which was once common in the gardens, but his research was fruitless after having made extensive enquiries of the gardeners and those who are interested in these subjects.

C. M. TRACY of Lynn, being called upon, said that some remarks just made by the chair had struck him as highly appropriate to the occasion. The chair had spoken of the disappearance of the old and favorite flowers from the gardens, and this was matter of remark to all gardeners and of regret to most. It was highly doubtful whether many of the flowers now fashionable and sold for high prices, ought really to take higher rank for beauty than the older sorts they have displaced. The old white rose, sometimes called the New England rose, has never found a successful rival, and is still sought after by discriminating florists, though now comparatively rare. Who does not remember the gorgeous poppies that used to adorn the gardens with their short-lived splendors? We have not replaced them with anything better. Then there were morning-glories, the only climber we had almost, the best, surely, and so good that it cannot be wholly given up, though not half as well attended to as it deserves. The ragged-ladies, and bachelor's-buttons, and honesties, used to make a beauty and variety in the front yards of the country that we see nothing of to-day, whatever be the effort to make good the loss with verbenas, petunias, and costly pinks. The hollyhocks were once the monarchs of the flower-bed, and ruled most royally. They are still grown, it is true, but grown for prizes at shows, and we do not see them making glad the surroundings of home as we once did. If we read in the old books on this subject, as in Gerard's and the like, we

shall find unstinted praise of the amaranth or prince's feather with its lovely variegated leaves. Now this old favorite is of the easiest growth, and from one or two specimens he had happened to see—rather poor ones—he would put it against any of the foliage-plants of the present time for beauty, whatever they might be. Thirty or thirty-five years ago the dahlia came in and supplanted many better flowers, but now it has met a just requital, and few will grow a plant that has so many practical difficulties about its culture.

Mr. Tracy added some observations on the foliage of the autumnal forests in New England, so striking to the eyes of tourists and so much a riddle to the man of science. No other country is said to exhibit it; and it has been attributed to the action of early frosts, though this is probably an error. A better explanation is that our peculiar climate induces a kind of ripening in the leaves, akin to what usually appears on the surface of fruits, producing a like display of colors. In giving glory to our woods it cannot be compared to anything else; but it is but a fleeting splendor beyond preservation, even in specimens well selected and treated with the utmost care.

Mr. Tracy added some remarks upon the local antiquities of the immediate vicinity; referred to the dwelling house occupied by Mr. Joseph Moulton, which, he said, was erected in 1666. Also to the construction of the canal which conveys the waters of Strawberry Brook to the mills of Messrs. Berry & Son, and which was probably one of the first canals constructed in this country.

Mr. F. W. PUTNAM gave an account of a recent observation of much interest, made by Miss GRACE ANNA LEWIS of Kimberton, Chester County, Penn., upon the fluids contained in the bulbs of feathers of living birds, and read the following extracts from letters received from Miss Lewis:—

“A few days since, while examining the feather capsule of a young dove, just fresh from the bird, I was both surprised and delighted to find my glass slide covered with the most exquisitely delicate and beautiful crystals, of at least from thirty to forty different variations. I have long believed that the animal kingdom repeats the primary forms of both the mineral and vegetable, viz: the crystal and the cell, but I do not know that this phenomenon can be considered in the light of proof, since I do not know whether they were poured and ready formed from the ruptured capsule, or whether from some unknown cause, the crystallization took place under my hand. I tried sugar, salt, the white of egg, milk, potato water, and finally I procured another capsule from the living bird. Only in the latter, did I find a repetition of the crystals. Did anybody ever see such crystals as these in the fluid of a feather capsule before?” * * * * *

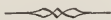
“In examining the adult plumage of our common barn-door fowl, and the domestic turkey, I wished to free the cells from their enveloping membranous covering, and for this purpose rubbed very fine cuttings

of bulbs in water, and placed them under the microscope. I had an excellent view of the cells floating freely in the water, but becoming wearied of looking, I left the microscope for a few minutes. On my return the glass was covered with crystals, larger, less varied and less beautiful than those I found in the fluid from the feather capsule of the nestling dove. Some which appeared on the glass on the afternoon of the 30th of August, from the feather of a turkey, are still well defined, though the majority of them have lost their outline. They remained in their full beauty over twenty-four hours, and now I think I can obtain photographs of them. I have copied a few from the many and enclose them to you. I am now well convinced that they are due to the effect of crystallization under the microscope, and that they are formed of the floating cells, arranged in such a wonderful variety of figures, but nearly all resolvable to a definite number of lines." * * * * *

Mr. S. C. BANCROFT offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of the Institute be presented to the trustees of the Fifth Methodist Church, for the free use of their vestry; and also to the following named persons, for various services performed and favors granted to promote the pleasure and interest of this occasion, viz:—William N. Mansfield, James M. Tarbox, E. W. Lothrop, Nelson A. Newhall, J. B. Ireson, Charles Osgood, jr., James M. Nye, and Misses Ireson, Haven, Kimball, Lindsey and other ladies.

The Institute then adjourned, and the company separated, expressing general satisfaction in the day's proceedings. It was gratifying to observe among the audience several of the veteran citizens of Lynn, of whom may be specified Messrs. Joseph Moulton, Richard Tufts and Benj. Mudge, who plainly showed their relish of the enquiring spirit that ruled the day.



LETTERS ANNOUNCED.

Baird, S. F., Eastport, Me., Sept. 12; Baker, C. Alice, Cambridge, Mass., Sept. 20; Böchsnnan, Prof., Bremen, Sept. 1; Challen, Howard, Philadelphia, Penn., Aug. 24; Chapman, James R., Beverly, Mass., Aug. 26; Chipman, R. Manning, East Granby, Conn., Sept. 15; Doggett, Kate N., Chicago, Ill., Aug.; Fellowes, R. S., New Haven, Conn., Aug. 23; Flagg, M. H., Hallowell, Me., Sept. 7; Hays, Sarah V., Haverhill, Mass., Sept. 3; Huntington, D. B., Aug. 10; Johnson, Lucy P., Salem, Mass., Aug.; Joslin, Ellen L., Leominster, Aug. 1; L'Academie Royale des Sciences, Lisbonne, Meh. 27; Lockyer, J. Mormon, London, Eng., Aug. 12; Mudge, Z. A., Marblehead, Mass., Aug. 11; Naturforscher Verein, Riga, May 17; Naturhistorischer Verein, Bonn, Apr. 15; Société Impériale des Naturalistes, Mascon, Apr. 2; Tracy, C. M., Lynn, Mass., Sept. 11, 16, 18; Verrill, A. E., Norway, Sept. 4, 14; Whipple, John A., Boston, Mass., Sept. 4; Zaba, N. F., Boston, Mass., Aug. 24.

ADDITIONS TO THE MUSEUMS OF THE INSTITUTE AND THE PEABODY ACADEMY OF SCIENCE.

(May to September.)

Miss ANNIE AGGE, Salem. Peacock Moth from Salem.

I. WATSON ANDREW, Salem. Specimen of *Monohamus titillater* taken in Salem.

JOHN L. ANDREWS, Melrose. A small slab containing fossils from West Mountains, Schoharie, N. Y., and a specimen of Arragonite, from Howe's Cave.

Miss CAROLINE E. BEMIS, Chicopee. Reptiles, Insects, Crustaceans, Radiates and Mollusks — alcoholic and dry — and part of an Indian skeleton and skin of a Florida Jay, from St. Augustine, Florida.

JACOB and BERNHARD CONRAD. A young Civet Cat, and a Parrot from India.

E. BICKNELL. *Ascaris* sp., from a Pig.

W. W. BUTTERFIELD, Indianapolis, Ind. Ferns from that vicinity.

J. ELLIOT CABOT, West Beach. A specimen of *Petromyzon* sp, taken clinging to a Mackerel.

J. P. CHANDLER. A curious growth of Fungus from Colebrook, N. H.

WESLEY CLARK, Panama. Crustacean from Pearl Island, Bay of Panama, taken in 15 fathoms.

W. H. DALL, Smithsonian Institution, Washington, D. C. One Gobioid, from ?; four specimens, three species Coral from Japan; one specimen of Sertularian from Isanatsky Pass, Alaska. One specimen of *Nullipora* from Japan.

Mrs. B. DE GERSDOFF. Mosses and Lichens from Savoy, Switzerland.

JOHN W. DRAPER, Dorchester, Mass. Fossils from Mammoth Vein Coal Mine, Penn.

Mrs. IDA EISENSTUCK, Chinandega, Nic. A necklace made by stringing the flowers of the Samara.

THOMAS FARNSWORTH, Salem. Insects from Salem.

Mr. FISH, Cape Cod. Tree Toad from Cape Cod.

AARON GOLDSMITH, Salem. Five kittens, born June, 1869, said to be the product of a dog and cat.

JAMES L. GREEN. Six Gulls eggs from Brown Cow, near Jewell's Island, Casco Bay.

Messrs. E. & J. GRIFFEN, Salem. A Gray Parrot from West Coast of Africa; a short club from the Feejee Islands.

JAMES GROVER, Salem. Dragon fly, *Æchna* sp., from Salem.

ARCHIBALD HALEY. Portions of an Indian skeleton, from South Salem.

C. H. HIGBEE, Salem. Living specimens of *Echinosternum Pensylvanicum* and *Nanemys guttata*, from New Jersey.

CHARLES HOWARD. Reptiles, Insects and Spiders, from near Fort Richardson, Texas.

JAMES KIMBALL. Two specimens of *Mactra solidissima*; one specimen of *Solen ensis* and several specimens of *Mytilus edulis*, from Coney Island, New York.

NATHANIEL KINSMAN, Salem. A Seal shot at Plum Island, July 25, 1869.

Mrs. LEFAVOUR, Beverly. A Brazilian Copper Coin.

L. T. LEE, U. S. Steamer Bibb. Two barrels of Coral, from Florida.

PHILIP McDONALD, Salem. A Portuguese Copper Coin of the value of twenty vintines.

[To be continued.]

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 1. SALEM, MASS., OCT., NOV., 1869. Nos. 10, 11.

One Dollar a Year in Advance.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

[Continued from page 81.]

Cotta's lot (see p. 56) bounded southerly on Broad street, extending from a point two hundred feet west of Pickering street, westerly two hundred and seventy feet to what was then the homestead of Wm. Flint, and so through to Essex street, where it extended from the eastern side of the estate now owned by Jos. S. Cabot, Esq., westerly to the homestead of Rev. Dr. Emerson. As already stated there were two houses on this lot in the very early years of the settlement, but they had disappeared in 1677. The first Quaker meeting house was built on the north-west corner of it by Thomas Maule in 1688. When the second meeting house was built on the north side of Essex street, in 1718, the old house was turned into a dwelling house, and in 1788, was sold to Robert Wallis. It stood on a small piece of land next east of Dr. Emerson's house. The next house built on Cotta's lot was by Richard Oakes in 1711, where the house next but one east of Dr. Emerson's now stands.

The old house, now standing between that and the house of Mr. Cabot, was built by Jeffry Lang in 1740 (*Essex Inst. Hist. Coll.* Vol. 6, p. 257). The Cabot house was built about the year 1744, the land having been sold that year to Francis and Joseph Cabot.

Between Cotta's lot and Flint street, and north of Wm. Flint's homestead (see p. 56), was a lot of about four acres on which John Reeves lived before 1661. One-half acre of this on the east side, with a dwelling house on it, was given by John Reeves to his daughter Elizabeth and her son John Richards. Elizabeth, daughter of John Richards and wife of Thomas Hooper, of Medfield, sold the same to John Dynn, in 1708. In 1713 it came into possession of his mother Elizabeth Derby,* widow of Roger Derby, and after her death in 1740, was owned by her son-in-law, Joshua Hicks, and was conveyed to James Ford, schoolmaster, in 1764, and to Rev. Daniel Hopkins, father-in-law of Dr. Emerson, in 1788. James Ford built the house now occupied by Dr. Emerson. The house of John Reeves was on the corner of Essex and Flint streets, and was left by him to his daughter Mary, wife of Ephraim Kempton.

West of Flint street, and north of the land of Richard Adams (see p. 55), was a lot of seven acres extending west to "Brick-kiln lane," now the Turnpike. It was owned by Wm. Flint in 1659, and appears to have been originally two house lots, the western one owned and occupied by Henry Kenny, and the eastern one by Thomas Gouldthwait. Their houses had disappeared in 1672.

Between "Brick-kiln lane" and Norman's Rocks, was the "Brick-kiln field," which, in the deed to Wm. Flint in 1656, is described as extending north "to the land of

* Wm. Dynn married Elizabeth Haskett, June 6, 1684, and had two sons, John and William. His widow became the second wife of Roger Derby.

John Alderman and Lawrence Southwick." In 1694 the executors of the will of Lawrence Southwick conveyed about three acres of land on the northerly side of the Brick-kiln, to Wm. Pinson, whose wife Rebecca was niece and heiress of Thomas Robbins to whom the land had been sold long before, but the deed "did not appear on record." This lot was bounded west by Norman's Rocks and the common land, and extended north to the Town Bridge (see p. 54), and included the "pond" or salt marsh made by the flowing in of the creek under the bridge. In 1699 it came into the possession of John Beckford and his wife Rebecca, who was the only child of Wm. Pinson, and they divided it in 1757 between their sons John, George and Benjamin, Beckford.

The Town Bridge was first built probably about 1640, the first mention of it on our records being an order, Oct. 11, 1640, that "Philip Verin, or any other, shall make the fence that leadeth to the bridge of [off] one side from the bridge to the highway that is by Richard Norman's house,* and that the towne will pay him." It was first built of timber, and in 1644 an agreement was made by the town with John Pickering to keep it in repair for sixteen years; but in 1646 it was taken down and a causeway built instead.

Next east of the bridge and north-east of Boston street were two houses, owned in 1659 by Giles Corey, the resolute martyr of witchcraft times. The western one, which stood eight rods north-west from the north corner of Boston and Federal streets, was his own homestead; the other, which stood four rods north-west from the north corner of Boston and Fowler streets, had been the homestead of John Alderman, who had left it by will to Ezra and Nathaniel Clapp of Dorchester. They gave a deed

* This highway was probably Brick-kiln lane, see p. 55.

of it in 1663 to Giles Corey, who had been "several years in possession," describing it as "one dwelling house and two acres of land," "bounded with the land of Robert Buffum, east, and the land of said Giles Corey, west, abutting upon the North River north and the street south."

We find upon a careful examination of the deeds of land in that vicinity that this two acre lot, which belonged originally to John Alderman, extended across Boston street, the eastern line of it beginning at a point on the North River about fifteen rods east of the Town Bridge, and running nearly south, crossing Boston street near the corner of Fowler street, so that a triangular piece of land was afterwards made by this line on the west, the Brick-kiln, or a continuation of Essex street on the south, and Boston street on the northeast. This triangular piece of land, which came to a sharp point near the present corner of May street and Boston street, was owned very early by William Beans and his wife Sarah, who was a daughter of Robert Buffum, and, no doubt, it originally belonged to the homestead of Robert Buffum, being cut off from it when Boston street was laid out. That part of the Alderman homestead which was south of Boston street, about one acre, was sold by Giles Corey to Edward Flint in 1682, and was between the Southwick lot on the west and the triangular piece of land above described on the east, and extending south to the Brick-kiln field. In 1659 Giles Corey conveyed to John Norton that part of the Alderman homestead north of Boston street, together with his own house and land adjoining, describing the premises as "two dwelling houses in Salem, one of them being the now dwelling house of the said Giles Corey, and is the corner house next the bridge, and the other being the house wherein Mr. Alderman formerly dwelt,

and near adjoining unto the said dwelling house of the said Giles Corey" with one acre and a half of land "altogether within fence near unto the bridge." John Norton conveyed to Jeremiah Meacham, in 1670, the same, except the Alderman house, which with about twenty poles of land on which it stood, a little to the north-west of Fowler street, appears to have been previously sold to Robert Wilson. In 1680 Jeremiah Meacham conveyed to his daughter Bethia, wife of George Hacker, "fourteen poles of land (on which said George Hacker has lately built a small dwelling house), lying at the townes end near the bridge or causeway, without the fortification, and bounded on the North River with a highway north-west, by my land north-east and south-east and on the highway or street south-west." In the division of Meacham's estate in 1696 this was increased to half an acre, and in 1731, it came into the possession of Isaac Hacker, who in 1719 had bought a piece of land next south-east with a house on it; which latter house was perhaps the same now standing on the corner of Federal street, in which Jeremiah Hacker afterwards lived.

The history of the Buffum estate which was next east is particularly interesting as it furnishes the only clue we have as to the time when Boston street was first laid out. The homestead of Robert Buffum, who died in 1669, consisted of about four acres next east of the Alderman lot, and extending from the North River to Essex street, and probably, as we have shown, including the triangular piece of land south of Boston street where his son-in-law, Wm. Beans lived. This homestead came into possession of his sons, Joshua and Caleb Buffum. On the Commoners Record is entered for Caleb Buffum "two common rights for his house and for his father's cottage right in the same place;" also for Joshua Buffum "two rights for

his house, and for old Moulton's, in the same place." This, as we have already explained, shows that Robert Buffum had lived, before 1661, on the same site upon which his son Caleb afterwards lived, and also that "old Moulton," that is Robert Moulton, lived, before 1661, where Joshua Buffum afterwards lived. Joshua lived in a house which was taken down in 1807, about five rods south-east of the corner of Fowler and Boston streets; Caleb's house was a few rods farther east, and about eight rods west of Buffum's Corner.

This Robert Moulton was the same mentioned in the letter to Gov. Endicott from the Company in London, Apr. 17, 1629, "We have sent six shipwrights, of whom Robert Molton is chief." He appears to have lived in Charlestown, in 1634 and 1635, but returned to Salem, and was one of the Selectmen, and also one of the three Deputies to the Gen. Court in 1637. He died at an advanced age in 1655, and in his will left his farm, which was where Brookdale* is now, to his grandson Robert Moulton. He also gave to "Goodwife Buffum 20s," and "to Joshua Buffum 10s." His inventory mentions "his farm 35£—his houses and ground in the town 10£." In what manner his house came into the possession of Robert Buffum, and afterwards Joshua Buffum, we have not been able to ascertain. In another letter to Endicott, May 28, 1629, "our barke that is already built in the Country" is mentioned. This was the first vessel built in the Colony, and was perhaps built under the superintendence of Robert Moulton, at the head of the North River, where the above evidence shows that he lived. This would have been a very convenient place for the purpose, and in fact, was afterwards for many years used for shipbuilding. Its

*The brook which runs through Brookdale was called "Moulton's Brook," in 1649.

proximity to the common lands, which were then no doubt covered with woods, may have led to the selection of this place for a shipyard, on account of the facility for bringing the timber to the water side.

The following order of the town, Nov. 29, 1642, is the only evidence we can find of the first laying out of Boston street: "Its ordered that the highway by the bridge shall be laid out through the lots of goodman Moulton, &c., not round about."

Next east of the Buffum estate was a house-lot of about an acre upon which Henry Reynolds lived in 1655; it was one hundred and seventy feet wide on Essex street, beginning at a point one hundred feet east of Buffum's corner, and extending back two hundred and forty feet. Henry Reynolds sold it to John Pickering, jr., in 1689; Timothy Pickering sold the eastern half with the house to Henry Williams in 1739. The old house, which was taken down about twenty-five years ago, stood where the dwelling house of Thomas Nichols, jr., now stands, next west of Fowler street.

Next east of the Reynolds lot was an acre of land which the heirs of Philip Veren conveyed to Wm. Lord in 1655, and he to his son in 1658, who in 1664 conveyed it to Edward Flint. Edward Flint, in 1679, conveyed the western quarter part of it to Ann, wife of Anthony Needham, who, in 1696, conveyed it to Caleb Buffum, and he, in 1718, gave it to the Society of Friends, they having, as the deed says, "built and finished" on the front part of it "a House for the Public Worship of God, and the other halfe of the said ground the Donor hereby freely gives to the Society aforesaid for a burying place." The Quaker meeting house stood on the front part of this lot for more than a century, and then was sold to Samuel Brown and removed to his land where the Lynnfield road crosses the old Ipswich road in Peabody.

North of the two lots last described was the homestead of William Bacon, about three acres, where he lived in 1640. He also owned an acre of land between the Veren lot, just described, and Dean street, on which Roger Morey had a house before 1644, and north of which was another acre of land which Elizabeth Spooner conveyed to Edward Flint in 1668, and which was probably the homestead of Robert, or John Pease in 1644. The house of William Bacon appears to have stood on the bank of the North River about two hundred feet west of Dean street. He left his house and one acre to his son Isaac, and the other three acres to his wife Rebecca. In her will, in 1655, she gave the house and acre adjoining, or the use of it, to her "brother Robert Buffum" and the three acres to "my cossen Ann Potter, and my cossen Richard Cherlcraft." Ann Potter* married Anthony Needham, who, in 1679, conveyed the three acres to Edward Flint. Robert Buffum also, it seems, conveyed to Edward Flint, in 1667, the acre on which Bacon's house had stood, in exchange for another acre adjoining his own homestead. Thus Edward Flint became possessed finally of about five acres on the west side of Dean street, which he left, in 1711, to his son Benjamin, among whose heirs it was divided in 1734. Edward Flint's house was on the western corner of Essex and Dean streets. In 1721 Benjamin Flint was allowed three "rights" for "Mory, Pease and Bacon's cottage rights on his father's homestead."

[*To be continued.*]

* It appears by several depositions, recorded in the Registry of Deeds in 1695, book 10, fol. 186-9, that Wm. Bacon was living in Dublin in 1639, and came here soon after, and that his wife Rebecca was a daughter of "Thomas Potter, Esq. who had been Mayor of the City of Coventry" in Warwickshire, England, and that her brother, Humphrey Potter, who was the father of Ann Potter, afterwards the wife of Anthony Needham, was the only son of said Thomas, and "was slain in that great and general massacre that had been in Ireland;" and that thereupon Ann Potter's aunt, Mrs. Rebecca Bacon, sent to Ireland for her to come and live with her in Salem.

ORDER OF MEETINGS.

Regular Meeting, Monday, October 5, 1869. The President in the chair.

Daniel Staniford, Kate Nourse, and Edward Maloon of Salem; Benjamin C. Raymond of Beverly; Stephen D. Pool of Lynn; J. F. Le Baron of Ipswich; C. Alice Baker and Susan M. Lane of Cambridge, were elected members.

Regular Meeting, Monday, November 1, 1869. The first of the series of evening meetings. The President in the chair. Records of the preceding meeting were read. Correspondence and donations to the library and museum announced. In the absence of the Secretary, Mr. F. W. Putnam was requested to act.

The PRESIDENT mentioned that one of the donations to the Historical department was a Pew Door from the meeting house of the First Parish in Hingham, presented by Hon. SOLOMON LINCOLN of that town. The First church in Hingham was formed in 1635, and is said to be the twelfth in Massachusetts proper. Rev. Peter Hobart of Hingham, England, was the first minister. The present building was erected during the ministry of the Rev. John Norton, and was opened for public worship, Jan. 8, 1681-2. Additions were made in 1730 and in 1755, without materially altering its external appearance. In 1755 pews were introduced—previously benches or forms were used. "This door," writes Mr. Lincoln, "belonged to the pew which was owned by my grandfather, William Lincoln of Hingham, and his brother Enoch Lincoln, and which was owned and occupied by their descendants down to the time when the old pews were removed to enable the Parish to make the repairs which became necessary for the preservation of the ancient house. Enoch Lincoln was the father of Levi Lincoln, Att'y Gen'l of the U. S., and grandfather of Gov. Levi Lincoln of this State, and of Gov. Enoch Lincoln of Maine. All three men occupied the pew when they visited Hingham.

It occurred to me that a relic of our old meeting house might appropriately be deposited under the frame of the first meeting house in Salem."

Mr. JAMES KIMBALL made a few remarks on the church architecture of the olden times.

The presentation of skulls of the Walrus and Polar Bear, by Capt. J. W. PERKINS, called forth some appropriate remarks from Messrs. A. S. Packard and F. W. Putnam.

Dr. PACKARD gave an account of the occurrence of the Walrus on the coast of Labrador, stating that during the 17th century, in the times of the early voyagers Cartier and Charlevoix, the walrus was abundant on the Magdalen Islands in the Gulf of St. Lawrence, and

that Canadian and American fishermen had aided, a little over a century ago, in its extermination on those islands, where its bones and tusks still occur. According to tradition, it also inhabited some of the harbors of Cape Breton Island, one of these harbors being called Sea Cow Bay, and he was informed by a fisherman that its bones may now be found abundantly on an islet near Cape Sable, Nova Scotia, from fifteen to twenty feet above the sea. The walrus late in the Glacial Period, lived on the coast of Maine, as he had seen a portion of a tusk in the possession of a lady in Gardiner, Maine, near whose house Sir Charles Lyell discovered it in a clay bank, associated with the teeth of the bison.

On the coast of Labrador the last walrus seen or heard of in the Gulf of St. Lawrence, was killed at St. Augustine, thirty years ago. Several were seen at Square Island, on the Atlantic coast of Labrador, from fifteen to twenty years ago, and he had seen the head of a young individual found floating dead in the drift ice off Belle Isle, having probably fallen a victim to the harpoons of whalers in the Arctic Ocean, and floated down the great Polar current. For a period of at least fifty years, probably, the walrus has not bred south of Hudson's Straits.

Mr. F. W. PUTNAM exhibited the skulls of several species of bears, including a young polar, a large grisly, the common brown bear of Asia, and the black bear of America, and compared the skulls with that of the large polar bear presented by Capt. Perkins, pointing out the characteristics as exhibited by the series of skulls, and calling attention to the great confusion existing in regard to the species and the diversified opinions of naturalists regarding them. He also exhibited a molar tooth of a bear found in the shellheap at Goose Island, and stated that it was impossible to say with certainty to which species the tooth should be referred, though it was the last molar, a tooth that had been considered as the most characteristic of the various species. From its association it was probably that of a black bear, yet it more closely resembled the corresponding tooth in the skull of the Asiatic specimen on the table than any other, while the size of the tooth would indicate that it had belonged to a polar bear.

Dr. PACKARD remarked that the white bear occurred more commonly on the coast of Labrador than the walrus, and that remains of it might be looked for in the Indian shellheaps of New England, which it may have visited in early times, and as bones of it had been reported as having been found in the Quaternary strata of Ireland, its distribution on our north-eastern coast was of considerable interest. The Labrador settlers call it the "water bear," and it not unfrequently appears on the coast, brought down on the drift ice from more northern latitudes. At Square Island, a locality situated be-

tween Belle Isle and Domino harbor, two cubs were captured and taken to St. John's, Newfoundland. At Domino harbor a bear was shot in the spring of 1863, and the skin obtained by the well known artist, Mr. William Bradford, with whom the speaker sailed. An intelligent hunter told the speaker that the white, or "water" bear was not unfrequently seen fifty miles south of Hopedale. One was killed there in the winter of 1863, and in the previous autumn their tracks were "abundant." They were very shy and could not be seen in the day time. The last Polar bear seen on the Straits of Belle Isle, near the mouth of the Esquimaux River, was shot about twenty years ago.

F. W. PUTNAM called attention to the collection of fishes and other specimens from China and Siam, presented by Capt. HUTCHINSON, and spoke of the singular shape of the fins of the goldfish, brought about by the continuation of domestic breeds.

Quarterly Meeting, Wednesday, November 10, 1869. The PRESIDENT in the chair.

Records of the preceding meeting were read.

A letter was read from Dr. A. H. Johnson, tendering his resignation of the office of Home and Recording Secretary, owing to prolonged absence from the country.

Voted, That the Institute accepts, with much regret, the resignation of Dr. Johnson, and tenders to him its sincere thanks for his faithful and acceptable services, and the hope that health and prosperity will attend him and his family during their absence from this city.

Voted, That F. W. Putnam be requested to act as Secretary until the vacancy be filled.

HON. CHARLES W. UPHAM addressed the chair as follows :

Mr. President,—Within a few days an event has occurred which has made a deep impression, the world over. I do not propose, in reference to it, to indulge in any remarks of my own. The voice of individual feeling is not to be heard, until that of public bodies—Associations of Science and Philanthropy, Institutions of Learning, Municipal Communities, States and Governments—has been uttered. It is a circumstance not inappropriate, that this regular quarterly meeting of ours, gives to the Essex Institute the opportunity of being the first to express the sentiments of grateful and solemn appreciation of a memory and example, that will be cherished and honored everywhere through all time. I beg leave to offer the following Resolves :—

Resolved, That the Essex Institute participates profoundly in the sensibility with which the intelligence of the death of GEORGE PEABODY is received on both sides of the Atlantic.

Resolved, That, by his munificent endowment of the Peabody Academy of Science in this city, he has provided for the perpetual preser-

vation and enlargement of the Scientific Collections and Departments of the Essex Institute.

Resolved, That long absence, and the engagements of a vast business, connecting him with operations embracing the commercial and financial centres of civilization, did not lead him to forget the place of his birth and home of his childhood and youth, this its neighboring city, or his ancestral county. The memorials of his generous and affectionate interest in them will endure forever.

Resolved, That, by noble and comprehensive benefactions to Universities, Colleges and Academies, and to institutions for the diffusion of knowledge, and the relief, welfare and advancement of mankind, in the Old World as well as the New, without restriction to race or country, he has secured a perpetual remembrance everywhere, in grateful hearts, as the PHILANTHROPIST OF THE AGE.

Prof. A. CROSBY made some appropriate remarks in seconding the adoption of the above Resolutions.

The Resolutions were then adopted unanimously, the members rising.

Voted, That the Curators of the Historical Department be requested to report at an adjournment of this meeting, such arrangements as they may deem advisable relative to the receiving on deposit the books and other property of the Essex Institute Musical Association.

F. LeBoulanger of Salem, was elected a resident member.

H. W. Hollenbush of Reading, Penn., was elected a corresponding member.

Voted, To adjourn to meet on Monday next, at 7.30, P. M.

Adjournment of Quarterly Meeting, Monday, November 15, 1869. The PRESIDENT in the chair.

Records of the preceding meeting were read.

The Curators of the Historical Department submitted the following Resolution, which on motion of Hon. J. G. WATERS, seconded by W. P. UPHAM, was adopted:

Whereas, Preliminary measures have been taken to form a Musical Association* in connection with the Essex Institute; therefore,

*The association numbers about three hundred members, and has in its library several hundred volumes; also a piano made by Decker & Brothers, New York.

Two musical entertainments have been given:

First—MONDAY, October 11, 1869.

PROGRAMME.

- | | | |
|---------------------------------------------------|-------------|--------------|
| 1. "PIANO DUETT—Wedding March." | | Mendelssohn. |
| 2. PART SONG—Male chorus "Integer vitæ." | | Fleming. |
| 3. SOPRANO ARIA—"Hear ye Israel" Elijah. | | Mendelssohn. |
| 4. BASS SONG—"Two Grenadiers." | | Schuman. |
| 5. PIANO SOLO—"Fantasias" (op. 78. Nos. 5 and 6). | | Heller. |
| 6. PART SONGS— <i>a.</i> "Two Roses," | } | Werner. |
| <i>b.</i> "Bright Sword of Liberty." | | Weber. |

Resolved, That the Curators of the Historical Department be authorized to allow the Association aforesaid to use the rooms for all purposes that are not inconsistent with the provisions of Miss Plummer's will, under their direction;

Provided, That the property of said Musical Association shall be permanently deposited with the Essex Institute, and in case of dissolution shall become the property of the Institute, and also that the Association shall have an organization approved by the Curators.*

The PRESIDENT called attention to the desirableness of an enlargement of powers under the charter, and on motion of Hon. J. G. WATERS, it was

Voted, That the Directors be authorized to make application to the Legislature for such an amendment of the charter of the Essex Institute as they may deem advisable.

The business of the regular meeting was taken up. Donations to the library and to the museum, and the correspondence announced.

Mr. E. BICKNELL exhibited specimens of *Eozoon Canadense* from the Serpentine quarry in Newbury, Mass., which he had recently discovered. Specimens of serpentine from the "Devil's Den," in Newbury were sent to Mr. Bicknell last spring, by Dr. H. C. Perkins of Newburyport, but they did not give any indication of Eozoon. Other specimens from that locality have since been brought by Dr. Perkins, which gave reason to expect that the Eozoon would be found.

During the session of the American Association for the Advancement of Science, at Salem, in August last, Dr. T. Sterry Hunt of Montreal, visited various localities in the neighborhood, and gave as

7. PIANO DUETT—Waltz "Leinates Klange."	Labitzsky.
8. SOPRANO SONG—"Bid me Discourse."	Bishop.
9. BASS SONG—"Good Night."	E. C. Cheever.
10. SOPRANO SONG—"Waiting."	Millard.

Second—MONDAY, October 26, 1869.

PROGRAMME.

1. PART SONGS— <i>a.</i> "On a Lake." }	Mendelssohn.
<i>b.</i> "The Lark." }	
2. QUARTETTE— <i>a.</i> "Cradle Song." }	A. S. Sullivan.
<i>b.</i> "Take Care." }	Bartholomew.
3. CONTRALTO ARIA (From St. Paul)—"But the Lord is Mindful."	Mendelssohn.
4. PIANO SOLO—"Andante and Rondo Capriccioso."	Mendelssohn.
5. SOPRANO SONG—"The First Violet."	Mendelssohn.
6. TRIO—"Ave Maria."	B. Owens.
7. PART SONGS FOR MALE CHORUS— <i>a.</i> "Lovely Night."	Chvatal.
<i>b.</i> "Evening Song."	Bank.
8. PIANO SOLO—"Tarantelle."	S. B. Mills.
9. QUARTETTE—"Chorus of Angels," from Eli.	Costa.
10. SOPRANO SONG—"Oh wert Thou in the cold blast."	Franz.
11. PIANO DUETT—"Three Marches."	Gade.
12. CONTRALTO SONG—"The Wanderer."	Schubert.
13. QUINTETTE—From Martha, "A che a voi perdono."	Plotow.

*The Association as now organized has the approval of the Curators of the Historical Department, who have made the necessary arrangements for the fulfilment of the conditions proposed.

his opinion that the rocks in this region belonged to the "Laurentian System," in which the Eozoon is found, and that Eozoon might be found in this region. He also visited the "Devil's Den," but was not successful in finding any specimens of Eozoon. On the 5th of November, Mr. Bicknell visited, in company with Mr. Osgood of Newburyport, the "Devil's Den," and also a quarry about half a mile from it. In the last mentioned place he succeeded in finding portions of the rock which gave good promise of the Eozoon. On returning to Salem with the specimens, and etching them with acids, he determined them to contain the Eozoon; plainly showing the characteristic tube system, but not in so good a state of preservation as the Canadian specimens which he had seen. The Newbury specimens contain large quantities of asbestos and sulphuret of iron, and the shell layers of the Eozoon appear to have been largely replaced by asbestos. In the earlier specimens of serpentine examined by Mr. Bicknell, although no positive evidence was shown by microscopical examination as compared with the Canadian specimens, yet the similarity of appearance by polarized light, determined him to visit the locality in person as he felt satisfied that it would be found there.

Mr. HYATT remarked that this discovery had now a significance which was of the utmost importance to the progress of geology in this county. The rocks of this county had been hypothetically referred to the lowest known series of Laurentian strata, but this is the first instance in which any positive evidence has been produced of their actual age.

The recent visit of Dr. T. Sterry Hunt has awakened a new interest in our local geology, and from his late paper at the last meeting of the American Association for the Advancement of Science, and his proposed visit here next spring, we may hope for the most important results.

Hon. W. D. NORTHEND gave an interesting account of some old papers belonging to the late Maj. Gen. Titcomb of Newburyport, and presented the same to the Institute. These papers gave considerable information on the life and character of Gen. Titcomb, especially in regard to the various offices which he held both of a military and civil character.

On motion of Hon. J. G. WATERS it was

Voted, That the thanks of the Institute be presented to Mr. Northend for his valuable contribution, and that he be requested to prepare a memoir of Gen. Titcomb for publication in the Historical Collections.

Mr. W. P. UPHAM expressed the hope that Mr. Northend would comply with the request, and made some remarks upon the import-

ant part that Gen. Titcomb took in the Revolutionary War, and that a memoir was due to him.

Third Musical Entertainment, Friday, November 26, 1869.

PROGRAMME.

1. PIANO DUETT — "Bolero," *Leybach.*
2. PART SONGS — *a.* "Oh fly with me," *Mendelssohn.*
 — *b.* "A cold frost came," "
 — *c.* "Over her grave," "
3. SONG — "Lascia chia pianga," *Handel.*
4. PIANO SOLO — "Concert Stuck," *Weber.*
5. SONG — "How fair thou art," *Weidt.*
6. PART SONGS — (for male chorus),
 — *a.* "Maiden's Lament," *Schaeffer.*
 — *b.* "Banish, oh maiden," *Loreno.*
7. SONG — "La Serenade," *Schubert.*
8. PIANO DUETT — Surprise Symphony — Andante }
 — Menuetto — Finale, } *Haydn.*
9. SONG — "Oh welcome fair wood," *Franz.*
10. PART SONGS — (for male chorus),
 — *a.* "The sun is gone," *Hertz.*
 — *b.* "Where would I be," *Zollner.*
11. AMERICAN NATIONAL HYMN, *Keller.*



LETTERS ANNOUNCED.

(*November.*)

Baker, C. Alice, Cambridge, Oct. 11; Bennett, James, Leominster, Sept. 17; Butterfield, N. Webster, Indianapolis, Ind., July 28; Goodale, G. L., Bowdoin College, Oct. 19; Hamlin, A. C., Bangor, Me., Oct. 23; Hough, Franklin B., Washington, D. C., Sept. 3, Oct. 26; Johnson, A. H., Salem, Oct. 8; King, D. Webster, Boston, Oct. 9, 11; Lane, Susan M., Cambridge, Oct. 11; Le Baron, J. F., Boston, Oct. 9; Lincoln, Solomon, Boston, Oct. 13; Maynard, C. J., Newtonville, Oct. 7; Morris, John G., Baltimore, Md., Oct., 11; Nichols, James R., Haverhill, Sept. 28; Nourse, Katy E., Salem, Oct. 20; Poole, Stephen D., Lynn, Oct. 9; Salisbury, Stephen, Worcester, Oct. 8; Shepard, Henry F., Boston, Oct. 16; Smith, Sidney I., New Haven, Conn., Sept. 23; Stephens, W. Hudson, Lowville, N. Y., Sept. 26, Oct. 6; Tracy, C. M., Lynn, Oct. 9; Verrill, A. E., New Haven, Conn., Oct. 4; Waters, J. Linton, Chicago, Ill., Sept. 21; Wiggin, J. K., Boston, Oct. 2; Augsburg-Naturhistorischer Verein, Aug. 4; Bamberg, Naturforschende Gesellschaft, 24; Danzig, Naturforschende Gesellschaft, July 28; New York Lyceum of Natural History, Oct. 4; New York Mercantile Library Association, Oct. 1; Savannah, Georgia Historical Society, Oct. 21; Stockholm, L'Academie Royal Suidoise des Sciences, July, August.

ADDITIONS TO THE LIBRARY.

(September and October).

BY DONATION.

BENNETT, JAMES, of Leominster, Mass. Annual Reports of the School Committee of the Town of Leominster for the years 1866-69, 2 vols. and 1 pamphlet, 8vo, Fitchburg, 1866, etc.

BROWN, T. B., of Chicago. Report of the Board of Police in the Fire and Police Departments, to the Common Council of the City of Chicago, for year ending Mch. 31, 1869, 2 pamphlets, 8vo.

BUTLER, BENJ. F., M. C. Report of the Commissioner of Education, for the year 1867-68, 1 vol. 8vo, Washington, 1868.

FELLOWS, R. S., of New Haven, Conn. Richard Saunders' Almanack for 1760, 12mo pamph., Phila.

FROTHINGHAM, RICHARD, of Charlestown. Life and Times of Joseph Warren, by R. Frothingham, 1 vol. 8vo, Boston, 1865.

HOUGH, FRANKLIN B., of Lowville, N. Y. The Industrial Chemist, 15 Nos., 1862 and 1863. Miscellaneous pamphlets, 36.

JOHNSON, SAMUEL, of Salem. Miscellaneous pamphlets, 513.

LEE, JOHN C., of Salem. Commercial Bulletin for August, 1869.

LINCOLN, SOLOMON, of Boston. Catalogus Universitatis Brunensis, 1869, 8vo pamph., Providentiae, 1869.

NASON, HENRY B., of Troy, N. Y. Annual Register of the Rensselaer Polytechnic Institute, 1869, 8vo pamph., Troy.

PUTNAM, MRS. EBEN, of Salem. Miscellaneous pamphlets, 22.

QUINT, Rev. A. H., of New Bedford. Minutes of the Sixty-seventh Annual Meeting of the General Assoc. of Cong. Churches of Mass., 1869, 8vo pamph., Boston.

SCUDDER, SAM'L H., of Boston. Entomological Notes II; from the Proceedings of the Boston Society of Natural History, 8vo pamph.

WARD, MARY A., of Salem. Nathanael Ames' Almanack for 1741 and 1763, 2 pamphlets 12mo, Boston. N. Low's Almanack for 1772, 12mo pamph., Boston.

WATERS, E. STANLEY, Chicago. The American Builder for May, 1869. Literary Bulletin, 7 Nos.

WATERS, J. LINTON, of Chicago. Report of the Chicago and North Western Railway Company, for the year ending May 31, 1869, 8vo pamph., N. Y., 1869.

BY EXCHANGE.

AMERICAN NUMISMATIC AND ARCHÆOLOGICAL SOCIETY. American Journal of Numismatics and the Bulletin for August, 1869, 8vo pamph., New York.

IOWA STATE HISTORICAL SOCIETY. The Annals of Iowa, published quarterly, for July, 1869, 8vo pamph., Davenport.

TIDSSKRIFT for POPULAERE FREMSTILLINGER AF NATURVIDENSKABEN ud-givet af C. Fogh og C. F. Lütken, 5 Nos., 8vo pamph., Kjöbenhavn, 1868, 1869.

NATURFORSCHENDE GESELLSCHAFT. Verhandlungen der Naturforschenden Gesellschaft in Basel, 8vo pamph., Basel, 1869.

NATURFORSCHENDER VEREIN. Correspondenzblatt des Naturforscher-Vereins zu Riga, Vol. XVII, 8vo.

NATURWISSENSCHAFTLICHE GESELLSCHAFT. Bericht über die Thatigkeit der St. Gallischen Naturwissenschaftlichen Gesellschaft während des Vereinsjahres, 1867-68, St. Gallen, 1868, 8vo pamph.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 1. SALEM, MASS., DECEMBER, 1869. No. 12.
One Dollar a Year in Advance. 10 Cents a Single Copy.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

[*Concluded from page 136.*]

On the east side of Dean street was a lot of seven acres, the eastern boundary of which was parallel with Beckford street, and ran from a point on Essex street about seventy feet west of Munroe street to the North River. This was owned before 1664, by Thos. Spooner; and he and Thomas Gardner, Sen., and Samuel Shattuck, Sen., had houses there as early as 1640. John Simpson built a house in 1672, on the south-east corner of this land, which, in 1772, was conveyed by Jane Ropes to John Higginson, and by Joseph Sewall to Miss Caroline Plummer in 1846.

Next east of this was a two acre house-lot, nine rods wide, where Richard Bishop lived before 1660, his house being near the river. On the south-west corner of this lot Roger Derby built a house, and lived there till his death, in 1698. The site of his house was about three rods

west of Munroe street, where the house of Mrs. Wallis stood which was recently removed, and it now forms part of Capt. Bertram's estate.

Between Richard Bishop's land and Beckford street, Thomas Trusler owned four acres, in 1653. This appears to have been originally two house-lots, each nine rods in width, one of which was owned by William Bound, whose house was near the river. Thomas Trusler's house was on the west side of the north end of Beckford street. His widow left it to her son Edward Phelps, who, in 1657, conveyed it, with three acres and a half of land adjoining, to Thomas Robbins, from whom it descended to his niece Rebecca, wife of William Pinson, who afterwards married Joseph Bubier of Marblehead, and conveyed the same homestead to Rebecca, wife of John Beckford, and only child of William Pinson. They conveyed the house, and a small part of the land adjoining, to their son John Beckford, in 1739, and it remained in that family for many years. Between Thomas Robins land and Essex street there were four dwelling houses before 1680. On the corner was the "Kitchen House" (see p. 57) which was probably built in 1664; and next west a house where George Dean lived in 1674; and west of that one which Thomas Maule built in 1674, and west of this another which John Kitchen sold to Richard Croad, in 1664.

East of Beckford street were three house-lots running from the river to Essex street, and each seven rods in width, the first owned before 1661, by Thomas Cole, and the next by Samuel Belknap, both of whose houses were near the river. The third from Beckford street was the homestead of Allen Kenniston as early as 1640. His widow married Philip Cromwell, who sold it to William Hirst in 1680. Dr. George B. Loring now lives on the

same estate. East of this, Hilliard Veren owned three-quarters of an acre, in 1665; and next to that were two other house-lots, each seven rods in width, and both owned by Philip Veren, in 1662, who lived where Mrs. S. F. Orne now lives, opposite Cambridge street. On the southeast corner of this land, where the entrance to the North Church is, Richard Sibley built a house in 1662. The rest was conveyed to Mary, widow of Nathaniel Veren, who became the wife of Thomas Putnam, and conveyed the eastern half to his son Thomas Putnam, and the western half to his son Joseph, the father of Gen. Israel Putnam. Thomas' part came into the possession of Benjamin Gerrish in 1713, and remained in that family for many years. Joseph's part was sold by him in 1718, to Mrs. Mary Lindall, a daughter of Mary Veren; who also bought the land to the west that had been owned by Hilliard Veren; and the whole was conveyed by the heirs of Samuel Barnard to Nathaniel Ropes, in 1768. On the West side of North street was the homestead of Roger Williams in 1635-6, of which we shall give a more extended account hereafter. All these lots ran through from Essex street to the river.

The house-lots, between North and Summer streets on the west and Washington street on the east, all of which ran from east to west, have been already described. We will only add that on the eastern corner of Essex and North streets, on land which was conveyed, in 1670, by Edmond Batter to his brother-in-law Hilliard Veren, Sen., was built a house which Timothy Hicks conveyed to Deliverance Parkman, in 1673, and which was taken down about twenty years ago. On the south side, from Summer street to Washington street, there were four houses before 1661, in what was called "Fogg's Row;" but we do not know who occupied them.

East of Washington street and next the North River the earliest houses were those of Reuben Guppy, John Smith, Wm. Comins and John Symonds. South of that was the homestead of Gov. Endicott (see Essex Inst. Proceedings, Vol. V, p. 131). Where Dr. Cate lives now was the house of Thomas Oliver, whose wife, Mary, was a noted character in the earliest Colonial history. Thomas Oliver's second wife, Bridget, who afterwards married Edward Bishop, was the first victim of the Witchcraft delusion of 1692.

On the north corner of Essex and Washington streets lived Walter Price; and next east lived John Woodbury* one of the Old Planters. He died in 1641, leaving a widow, Ann, as appears by our County Court records, who, in 1660, conveyed the house to Capt. George Corwin. It stood just east of Browne's Block. Next east of this, where Hon. Richard S. Rogers lives, was a house and half acre of land, in which lived Thomas Weeks before 1655. For reasons which will be stated hereafter, we believe that this was originally the house of Roger Conant, who, as he himself said, erected the first house in Salem.

Where the Mansion House lately stood, was the Ship Tavern, kept for many years by John Gedney. And between that and St. Peter street, was the homestead of Peter Palfrey, another of the Old Planters. After his removal to Reading, about the year 1648, this estate came into the possession of Wm. Browne.

From St. Peter street to the Common, and between Essex street and Brown street was all, in 1640, the homestead of Emanuel Downing. His house was afterwards the home of Joseph Gardner who married his

*Wrongly conjectured in a former article (Hist. Coll. Vol. 8, p. 253) to be Nicholas Woodbury, whose Will, dated 1685, we find is on the Suffolk Records.

daughter, Ann; and she afterwards married Gov. Bradstreet.

North of Brown street were house-lots extending to the river, and occupied before 1660, by Christopher Waller, Joseph Miles, Isaac Page and Rev. Edward Norris. East of where Williams street is, lived George Williams, who left his homestead in 1654, to his eldest son, John Williams. Between that and Winter street, was the homestead of Thomas Watson. He gave his estate, in 1668 and in 1672, to Jacob Pudeator, whose wife, Ann, was executed as a witch in 1692.

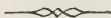
The Common, until 1660, extended south to Essex street, and also included the land between Winter street and Pleasant street. On the east side of Pleasant street the earliest houses were those of Thomas Rootes, whose house was on the north side of the cove at the east end of Forrester street; and Josiah Rootes, Edward Giles, Philemon Dickenson and John Borne, who lived in the vicinity of where Pickman street is now, their houses having disappeared in 1655, when John Gedney owned the land, afterwards known as the Gedney Pasture.*

For an account of the square between Washington street and Central street, see Hist. Coll. Vol. 8, p. 250. Where the Charter street Cemetery is now was the ancient, and probably the first, burying place. Near it John Horne had a windmill in 1637. Among the earliest houses between Central and Elm streets, may be mentioned those of John Holgrave (Downing Block), Henry Bartholomew (Pickman house and E. I. Marine Hall),

*We propose, in an appendix, to give an account of the first houses on the neck of land through which Bridge street runs, and of the Planters Marsh, so called; and will only remark here, that the interest which the Old Planters had in the land there, does not appear to have been as a place of residence, but simply to have arisen from a very early use of it, in common, on account of the great importance to them of the salt marsh. We also intend to give a further account of the houses of Roger Conant and Roger Williams.

and Wm. Hathorne (west corner of Liberty street). On the west corner of Elm street lived Wm. Allen, one of the Old Planters. East of Elm street was the homestead and wharf of Elder John Brown.

From there to the Neck, the house-lots were mostly occupied by merchants, seamen, ship-builders, and others connected with maritime affairs.



ORDER OF MEETINGS.

Regular Meeting, Monday, December 20, 1869. The President in the Chair.

Records of preceding meeting were read. Correspondence and donations were announced.

Mr. JOHN ROBINSON was elected Home and Recording Secretary for the remainder of the year, and until another shall be chosen in his stead.

A letter from Dr. F. B. HOUGH, contained a full account of his opinion in regard to "the Onondaga giant," which he considered was undoubtedly a deception.

Mr. ALPHEUS HYATT gave an account of this deception, which he received from a friend who had made extensive enquiries in relation thereto.

THE PRESIDENT read a letter from Mr. THOMAS SPENCER, a former resident in this city, and an officer of the Natural History Society at the time of its organization and for several years afterwards, giving an account of two visits to Scrooby, the Home of the Pilgrims; one about nineteen years since, the other in October last. He remarked that this letter comes at an opportune time, within a day or two of the anniversary of the landing of the Pilgrims at Plymouth, in 1620, a day memorable in our annals, and one which is appropriately noticed by the children of New England wherever located. He gave a brief history of Scrooby, alluding to Elder Brewster and some of his companions — their removal to Holland, and finally coming to New England, and the founders of a colony which has had so much influence in the organization of this government.

To the President of the Essex Institute, Salem, Massachusetts, U. S.

MY DEAR DR. WHEATLAND: — I beg to acknowledge the receipt of your very kind letter, and the certificate constituting me a corresponding member of the Essex Institute. It has given me much pleasure to find myself once more associated with friends that I

loved, friends whose kindness to me made my life happy and pleasant during my sojourn in Salem.

I hope I shall be forgiven for not replying more promptly, but I wished to supply an item of information to the Historical department of the Institute, but poor health for many months prevented me from making the necessary journey. I wished to give a brief report on the present condition of Scrooby and Austerfield, the English homes of Brewster and Bradford.

About nineteen years ago I made a pilgrimage to Scrooby and Austerfield. On entering Scrooby village my eye hastily wandered over the scene it presented, and I looked eagerly for objects that must have been familiar to the pilgrim fathers. I wanted a common point, where the past and the present—the pilgrim and myself—might shake hands. While in this mood my eye settled upon Scrooby Church; it was the object I wanted; it was the link in the chain that I was looking for. Ah! there it stood in its gray old age, just as the pilgrim fathers left it, and I was not long in recognizing in its tapering spire the type of the many spires that adorned the landscape of New England some fifty years ago; many of which I endured the pain of seeing thrown down to give place to steeples and turrets, as I thought, less emblematic of a christian country. On entering the church I could well imagine that little or no alteration had taken place from the time of the Elder Brewster, and I paced its aisles with a lively interest, every step I took being in the footprints of a pilgrim father.

On strolling into the village I enquired for the site of Scrooby Manor, which was soon pointed out to me, and, what was of deeper interest, the manor farm-house. My informant was an old man, who was hedging and ditching. He was very intelligent and very communicative for one of his class, and soon gave me to understand that certain portions of the original manor were incorporated bodily into the manor farm-house, which he had just pointed out. This information awakened a new interest, for I had just read in Mr. Hunter's valuable pamphlet that *no portion of it* (the old manor) *is now standing*. I was soon knocking at the door of the manor farm-house, and on hastily explaining the motive of my call I was received with a genial cordiality by its well-bred inhabitants. On putting the question plainly, "does any entire portion of the old manor make a part of this present building?" I was told that such was really the fact. And then, with as much modesty as I could command, I requested to be shown that particular portion, and was politely shown into an upper room called the "manor chamber." It was then a family sleeping room and handsomely furnished. On closely inspecting the walls I discovered that peculiar recess, the Piscina, which is always found in old Roman Catholic Chapels. On the landing at the entrance to the manor chamber there was a small latticed window with stone mullions and transom, that I could well imagine as belonging to the ancient manor. Immediately before this latticed window there stood a mulberry tree, said to have been planted by Cardinal Woolsey. It was a living thing upon which the pilgrim fathers must have gazed many and many a time, and peradventure eaten of its fruit. I have seen the old oaks in Sherwood forest—some of them dating from the days of King John, and I have paid some attention to the duration of hedges, and I can readily believe that the Scrooby mulberry tree was planted by Woolsey, or as far back as his day.

From Scrooby I walked to Austerfield, and, very like, by the same bye-paths that young Bradford trod when he stole over to Scrooby to worship with his co-religionists at the manor. The old church of Austerfield is very small, not calculated to hold more than from one hundred to one hundred and fifty people, but yet its walls are three feet thick. It has stood for many centuries, and for anything I saw it may stand for many more. As I gazed at its massive construction I could not help thinking, "truly the men of Austerfield built for posterity;" and young Bradford catching the inspiration of his native village laid his foundations broad and deep in another hemisphere, and in a more magnificent manner, built for posterity. I should think, from appearances, that the village of Austerfield was much the same as when Bradford left it. The register of his baptism is in the keeping of the clergyman who resides at Bawtry. One item of interest I gathered from the parish clerk, an old man. One of the bells in the tiny tower of the church, was the veritable bell—the Curfew—that tolled out the harsh tones of the Norman conquests. Here ended my first pilgrimage.

The result was the discovery of a portion of the manor of Scrooby—the cradle of the Anglo-Norman* Republic—the precious spot where the infant Giant of the West drew its first struggling breath.

On the 4th day of the present month, October, 1869, I sat out on my second pilgrimage to Scrooby and Austerfield. It was a fine autumnal day—a day of the English Indian summer—called by Shakspeare, "St. Martin's little summer." The phenomenon of a few fine days—a sort of blessing added to the summer—is common, I am inclined to believe, all over the northern hemisphere. As a farmer by profession and practice I regard it as a kind provision of nature, enabling the husbandman to prepare his land and sow his seed wheat for the next year's harvest. On the present occasion, I took my own conveyance and a man to drive me. Before I reached the village of Scrooby, the well known spire of the old church presented itself. On alighting at the church I found all right outwardly—just as the pilgrim fathers left it—but within a great change had taken place. About five years ago the body of the church was completely renovated, and resealed. It was no longer the church that the pilgrims knew, but the people of the present day have a more commodious place of worship, and that circumstance stifles all regrets. Among the many changes that nineteen years has brought about none was so great as the intense interest that had sprung up in the interval. Scrooby Church had become the Mecca of New England people. On my first visit I only found one individual that was at all aware of the American interest attached to Scrooby, and that individual was Lord Galway, whom I accidentally met at Bawtry station. Now all this apparent indifference is changed. Mine host at the Bawtry hotel, his men in the stable, parish clerk and sexton, all that I met were alive to the American interest that had gathered round Scrooby and Austerfield. Some of the people told me that the Americans would have restored Scrooby Church if the parishioners would have allowed a simple restoration. During the time of its actual repair many Americans visited the spot and bought up fragments of the old church. One rejected door stone and the old font

* I prefer to write Anglo-Norman, because I think it is the Norman element of our population that migrates and stirs new regions with its restless activity.

were given by Lord Houghton, the patron of the church, to some Chicago Pilgrims, and taken by them to that far away city.

On visiting the manor farm-house, I found that great changes had taken place. Two sets of tenants had passed away to another world. The house is all but deserted; the only inhabitants are a laborer and his family. The manor chamber is there, but it looked mean without its furniture. The small recess in the wall that I call the Piscina, is there, and on the opposite wall, immediately before it, a larger recess was pointed out to me, with the remark, "Here once a pulpit stood." But I thought—more likely a cross. The small latticed window, with its stone mullions, is there, on the landing, looking down upon Cardinal Woolsey's mulberry tree, which, by the way, is fresh, green, and vigorous, and has this past summer borne a large crop of berries. On this occasion I was shown into what is called the manor room; but in this I saw no evidences of antiquity, save the thickness of the walls, and these formed the basement of the manor chamber. The inner wall of this chamber is obscured by a coating of modern plaster; but in passing into the next chamber we see the wall in its original state, and the indications of a large window, now and for many years filled up with masonry.

For myself, on a retrospect of the whole, I could not resist the impression that I received nineteen years ago, and that was, that a considerable portion of the old manor was left standing at the time of the final dissolution; and that portion, with large additions, made up the present manor farm-house. The manor chamber was very like a private chapel, such as we often found in old manor houses, and in those of a religious character.

I am aware that Mr. Bartlett, a later pilgrim than Hunter, in speaking of the old manor, says, "Not a wreck of this sumptuous building now remains." He also tells of some fragments of richly carved oak, as propping up the roof of a cow-shed. Appended to the manor farm house there is a suit of modern farm buildings, and in the construction of these the old oak of the old manor is largely employed. I saw one baulk in a stable, from fifteen to twenty feet long, richly carved and every way worthy of the reception room or the banquet halls. There are more, I was told, and collectively they would convey a better idea of Scrooby's manorial magnificence than anything that remains.

From Scrooby, I drove on this occasion to Austerfield, and lost the luscious thought that I was treading in the footsteps of young Bradford. Everything in Austerfield village looked much as it did nineteen years ago. The old parish clerk was dead and gone but he was succeeded by his son who only wanted a few more years to make him as rich and ripe as his father. Nothing new had occurred. The church was re-seated and repaired in 1835. The chancel, however, does not appear to have received the least touch of modern improvement. The communion rails are doubtless the same as William Bradford looked down upon in his youth, and before which his grandfather and grandmother stood when they were married, and, possibly, generations before them. The chancel of our parish churches is repaired by the patron of the church, while the body or nave of the church is improved by the parishioners; and these parties often act independently of each other. They have evidently done so at Austerfield. On questioning the clerk about the curfew bell, he could give no better authority than that of his father, who had received the tradition from a former parish clerk.

In conclusion, I will beg permission to observe that the chancel of Austerfield Church is much out of repair, and some alteration will, very like, take place before long. And the same may be said of the manor farm-house at Scrooby. It looks, just now, as if the landlord must either pull it down or thoroughly repair it. In either case — in any action at Scrooby or Austerfield — some relics precious to the sons of the Pilgrims might be secured.

When the proper season arrives, I will, if health and life permit, send thee, Mr. President of the Essex Institute, a small bundle of cuttings, by post, from Woolsey's mulberry tree. The mulberry grows from cuttings.

In the event of any member of the Essex Institute visiting Scrooby, I would observe that there is a lady, a Mrs. Smith, a widow of one of the late tenants of the manor farm-house, now residing at Bawtry, who can give all the information that can be obtained respecting the incorporation of portions of the old manor into the now standing manor farm-house. Bawtry lies midway between Scrooby and Austerfield.

With kind regards to all the members of the Institute, and particularly to those who have so kindly remembered me after an absence of thirty years, I am, Mr. President, very respectfully, your friend and coadjutor,

THOMAS SPENCER.

P. S. I shall send Mr. Hunter's Historical Tract by present post, and beg its acceptance by the Institute.

BRANSBY, near Lincoln, England, }
October 28, 1869. }

After the reading of Mr. Spencer's letter, Mr. GEORGE D. PHIPPEN commenced a series of remarks on the plants mentioned in the Bible.

On motion of Hon. J. G. WATERS, it was

Voted, That Mr. Phippen be requested to continue his remarks on this subject at the next meeting of the Institute.

ourth Musical Entertainment, Wednesday, December 22, 1869.

PROGRAMME.

1. PIANO DUETT — "Waltz, Leinate's Klange," . . . *Labitzky.*
2. SONG — Soprano, "Ave Maria," *Schubert.*
3. DUETT — "When I know that thou art near me," *Abt.*
4. SONG — Tenor, "None ever," *Mattei.*
5. PART SONG — Since first I saw your face," . . . *T. Ford, 1609.*
6. SONG — Soprano, "Salve Maria," *Mercadante.*
7. SONG — Soprano, "Slumber Song," *Kucken.*
8. PIANO SOLO — "La Scintilla," *Gottschalk.*
9. SONG — Soprano, "Il Marinaro," *Campana.*
10. TRIO — "Te sol quest anima," *Verdi.*
11. PIANO DUETT — "Trauer Marsch," *Mendelssohn.*
12. PART SONG — "Annie Lee," *J. Barnby.*

LETTERS ANNOUNCED.

Allis, Solon W., Boston, Nov. 18; Baneroft & Co., San Francisco, Cal., Nov. 26; Boardman, Samuel L., Augusta, Me., Nov. 16; Boulanger, F. Le, Nov. 19; Chatfield, Charles C., New Haven, Conn., Dec. 16; Cutting, Hiram A., Lunenburg, Vt., Dec. 7; Dalrymple, E. A., Baltimore, Md., Dec. 2; Hamlin, A. C., Bangor, Me., Nov. 29; Hough, F. B., Washington, D. C., Nov. 16, 22; Howell, Robert, Nichols, Tioga Co., N. Y., June 14; King, D. Webster, Boston, Dec. 8; Lee, Wm. Raymond, Boston, Nov. 17; Lewis, Winslow, Boston, Nov. 25; Moore, George H., New York, Nov. 18; Shepard, Henry F., Boston, Nov. 20; Spencer, Thomas, Bransby, near Lincoln, England, Oct. 28; Stephens, W. Hudson, Lowville, N. Y., Dec. 1; Chicago, Franklin Society, Nov. 15; Georgia Historical Society, Savannah, Nov. 13, 27; Quebec Literary and Historical Society, Dec. 6; Manchester Literary and Philosophical Society, Aug. 2; Smithsonian Institution, Washington, D. C., June 29; Zurich, Die Naturforschende Gesellschaft, Sept. 30.



ADDITIONS TO THE LIBRARY.

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ANDREWS, SAMUEL P., of Salem. List of Shareholders in the National Banks in the Commonwealth of Massachusetts, 1 vol. 4to, Boston, 1869.

ATWOOD, E. S., of Salem. Paris Universal Exhibition, 1867, 8vo pamph., London. Specimen copies of several French papers.

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BOARDMAN, SAMUEL L., of Augusta, Me. Bewick's History of Quadrupeds, 1 vol. 8vo, Newcastle, 1824. Agriculture of Maine, 1865-68, 4 vols. 8vo, Augusta. Portland Business Directory, 1868, 1 vol. 8vo.

BROOKS, CHARLES T., of Newport, R. I. Pentecost, by S. L. Little, 1 vol. 12mo, Newport, 1869. Miscellaneous pamphlets, 35.

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BUTLER, BENJ. F., M. C. Report of the Department of Agriculture for 1869, 8vo pamphlet, Washington. Review of the Report of the Special Commissioner of the Revenue, 8vo pamph., Philadelphia, 1869. Report from the Joint Select Committee on Retrenchment, 1 vol. 8vo, Washington, 1868.

CHAMBERLAIN, MRS. JAMES, of Salem. A Voyage Around the World, 1 vol. 8vo. London, 1767.

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CROSBY, ALPHEUS, of Salem. New Hampshire Register for 1810, 1816, 1832, 3 pamphlets 16mo, Concord.

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DE REFFYE, M. VERCHERE. Les Armes D'Alise. Notice avec Photographies et Gravures sur Bois, 8vo pamph., Paris, 1864.

FABENS, B. H., of Salem. Records of the Proceedings of a General Court Martial holden at Salem, Sept. 28, 1812, 8vo pamph., Cambridge.

GOSSIP, WILLIAM, of Halifax, N. S. *The Antiquity of Man in America*, 8vo pamph., Halifax, 1869.

GREEN, SAMUEL A., of Boston. *Cotton Culture*, 1 vol. 8vo, Boston, 1869. *Proceedings of the Commercial Convention*, 1 vol. 8vo, Detroit, 1865. *Proceedings at the First Meeting of the National Board of Trade of Philadelphia*, 1 vol. 8vo, Boston, 1868. *Fifteenth Annual Report of the Boston Board of Trade*, 1 vol. 8vo, Boston, 1869. *Report of the School Committee of the City of Boston*, 1867, 1 vol. 8vo. *Farewell Address by Rev. J. H. Fairchild*, 1 vol. 12mo, Boston, 1868. *Miscellaneous pamphlets*, 97.

HOUGH, FRANKLIN B., of Washington, D. C. *A Series of Tables of the Several Branches of American Manufacture*, 4to pamph., 1810. *Miscellaneous pamphlets*, 28.

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HYATT, ALPHEUS, of Salem. *Miscellaneous pamphlets*, 81.

JOHNSON, AMOS H., of Salem. *Manual of Homœopathic Practice*, 1 vol. 8vo, Phila., 1859.

KNOWLAND, RICHARDSON, of Marblehead. *The Boston News Letter*, No. 1, April 17, 1704.

LAWRENCE, CHARLES, of Danvers. *Cultivator and Country Gentleman*, 22 vols. *American Agriculturist*, 3 vols. *New England Farmer*, 3 vols. *Colman's European Agriculture*, 2 vols. *Weekly Messenger*, 1 vol. *Horticultural Register*, 3 vols. *Magazine of Horticulture*, 4 vols.

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MILLER, E. F., of Salem. *Miscellaneous pamphlets*, 8.

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MORSE, E. S., of Salem. *Worcester's Elements of Geography*, 1 vol. 8vo, Boston, 1827. *Miscellaneous pamphlets*, 9.

MORTILLET, M. G. DE. *Essai d'une Classification des Cavernes et des Stations sous abri fondée sur les Produits de L'Industrie Humaine*, 8vo pamph.

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POWERS, STEPHEN A., of Salem. *An Old Document, in Congress, July 4, 1776, a Declaration by the Representatives of U. S. A., signed by John Hancock*.

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PUTNAM, Mrs. EBEN, of Salem. *Three 8vo pamphlets*.

ROBERTS, S. R. *Catalogue and Synonymy of the Genera, Species, and Varieties of Recent Mollusca, Part 4*, 8vo pamph., Philadelphia, 1869.

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SIBLEY, JOHN L., of Cambridge. Catalogue of the Officers and Students of Harvard University for 1869-70, 12mo pamph., Cambridge.

STATEN, Mrs. K. L., of Salem. Church Psalmody, 1 vol. 8vo, Boston, 1852. Romaine's Discourses, 1 vol. 8vo, Edinburgh, 1788. Also nine 8vo vols.

STEVENS, WILLIAM H., of Lowville, N. Y. Boonville, Lowville, Potsdam and Carthage Directories for 1867-68, 4 vols. 12mo, Watertown.

STONE, HENRY, of Nashville, Tenn. Water Power of Maine, 1 vol. 8vo. Mineralogy of Nova Scotia, 1 vol. 8vo, Halifax, 1869. Report of Commissioners of Hydrographic Survey, 1 vol. 8vo, Augusta, 1868. International Commercial Convention, 1 vol. 8vo, Portland, 1868. Miscellaneous pamphlets, 10.

TUCKER, JONATHAN, of Salem. Report of the Secretary of the Iowa State Agricultural Society for 1868, 1 vol. 8vo, Des Moines, 1869. 2 pamphlets, 8vo.

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WALTON, EBEN N., of Salem. New England Farmer, 23 Nos. Journal of the Grand Division of the Sons of Temperance, 23 Nos. Miscellaneous pamphlets, 13.

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ADDITIONS TO THE MUSEUMS OF THE INSTITUTE AND THE PEABODY ACADEMY OF SCIENCE.

LUKE BEMIS. Eleven specimens of Mica, infiltrated with magnetic iron, from New Castle Co., Pa.; and a specimen of *Astacus*, from Glenn Mills, Pa.

L. T. BURBANK, Lowell. Four Stone Arrowheads, from the vicinity of that place.

BENJAMIN F. BUTLER, M. C. A specimen of Clay, from the Artesian Well at Fortress Monroe, taken at the depth of 734 feet; this is part of the same stratum through which the boring has gone, since it passed the 280th foot. Also a sketch of the well, showing the various strata through which it passed, drawn on a scale of one inch to ten feet.

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Mrs. MARY MANN, Cambridge. A collection of Plants, from Algeria; from the Herbarium of the late Horace Mann.

ALONZO MASON, Beverly. A Gray Parrot from West Coast of Africa?

D. F. MEADY. Model of a fast-boat from Singapore.

Mrs. SAMUEL MOODY, Newburyport. Slab containing fossils, from Mt. Auburn, Cincinnati.

J. A. MOORE, Gloucester. Egg Cases containing young shells of *Pyrula*, from Trent River, N. C.

JOSEPH MOORE, Richmond, Ind. A specimen of Golden Crowned Wren, *Regulus satrapa*, from that place.

F. A. MORRILL. Chicken Snake, taken in the vicinity of Salem.

WM. NELSON, Agent of Panama Railroad at Panama. A Stone Axe and a Necklace consisting of twelve stone beads and a pendant, from Chiriqui, C. A.

S. A. NELSON, Georgetown. Snakes, from Georgetown.

- F. W. NICHOLS. Specimen of *Æschna grandis*, from Salem.
- H. K. OLIVER. Hair from the head of an Egyptian mummy, said to have been embalmed 6,000 years.
- J. M. PARSONS. Living specimen of *Pecten tenuicostata*, from George's Bank.
- O. PHILLIPS, Peabody. *Condylura cristata*, killed in Peabody.
- N. PHIPPEN, Salem. Four specimens of Lead Ore, from the Plymouth Mine, Plymouth Co., Vt.
- J. PIERCE. Sample of Gould's Alkaline Phosphate.
- Miss H. J. PRINCE, Beverly. Specimens of *Venus gemma* (*Gemma gemma*) from Beverly Beach.
- GEO. G. PUTNAM. Specimen *Telia polyphemus* from Salem.
- CHARLES RIVA, Wenham. A specimen of *Triton violaceus*, from Wenham.
- JOHN H. SEARS, Danvers. Flying Squirrel, from Danvers.
- S. V. SHREVE. An Earthen Water Jar, from China.
- F. SHIRLEY. Embryonic Musk Rats, taken about May 3.
- WM. H. SILSBEE. Galls made by various Insects, from the vicinity of Salem. Flowers of *Sarracenia purpurea* of a bright lemon color, found in Beverly woods. Chrysalids, from the vicinity of Beverly.
- A. A. SMITH. A chicken having three legs.
- J. ALDEN SMITH. A collection of Minerals and Ores, from various localities.
- R. E. C. STEARNS, San Francisco, Cal. Reptiles, Fishes, Crustaceans, Mollusks and Radiates, from Tampa Bay, Fla. *Leptogorgia virgulata*, from Long Key, Gulf of Mexico.
- SOLOMON STEBBINS, Springfield, Mass. A collection of Reptiles, from Sunderland, and Springfield, Mass.
- J. H. STERNBURG, Panama. A collection of Reptiles, Fishes, Insects and Crustaceans, from Panama.
- Major WM. STONE, U. S. A. A collection of Insects, from Aiken, Ga., and other localities, and Fossils, from Lowell, Ky.
- MR. STORY, Beverly. Specimens of *Corydalis*, from Beverly woods.
- Dr. F. SYDELL, Chinandega, Nic. A highly polished Stone Chisel found on his Plantation in Chinandega, and two living specimens of "Povon," male and female, from Nicaragua.
- WALDO THOMPSON, Swampscott. Eggs of *Buccinum undatum*, from King's Beach, Swampscott.
- JONATHAN TUCKER. An Earthen Water Jar, from Sumatra, and a pair of Antlers of the Red Deer.
- JOSEPH TUCKER, St. Louis, Mo. Sixteen pieces of Wampum, from the "Great Mound" in the City of St. Louis.
- JOHN B. UPTON, Sierra Leone, Africa. Five specimens of Snakes from Sierra Leone.
- LEWIS VERY. *Telia Polyphemus*, from Salem.
- A. F. WALCOTT. Two Musical Instruments, from Siam.
- C. A. WALKER, Chelsea. A Stone Gouge dug up at No. 100 Chestnut Street, Chelsea. Two Skins of the Crossbill, from Chelsea.
- JAMES L. WARD. Loon killed in Collins' Cove, Salem.
- D. P. WATERS, Salem. A specimen of *Larus Smithsonianus*, Herring Gull, killed in the vicinity of Salem.
- B. WEBB, jr. Coleopterous Insect from a case of Gin from Holland.
- Mrs. WILLIAM S. WEST. Eggs of Robin and Canary.
- JOHN G. WILLIS. A Spear from the East Coast of Africa.
- A FRIEND in Wakefield. Stone Arrowhead from Wakefield.

BULLETIN

OF THE

ESSEX INSTITUTE,

VOLUME II.

1870.

SALEM, MASS.

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1871.

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BULLETIN

OF THE

ESSEX INSTITUTE.

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One Dollar a Year in Advance. 10 Cents a Single Copy.

AN ABSTRACT OF REMARKS UPON THE PLANTS OF SCRIPTURE.

BY GEORGE D. PHIPPEN.

THE lectures, of which this was a condensation, were prepared for an entirely different purpose than presentation before a scientific association. There is much greater obscurity in our version regarding these plants, than would be the case were a new one now made which should include a better knowledge of the productions of Palestine and the neighboring countries, than was then possessed. The copiousness of allusions to the vegetable kingdom, throughout the Hebrew Scriptures, impresses with an interest, amounting to astonishment, all those whose attention has been called to the subject.

A large portion of the rich and glowing passages, from both the greater and lesser prophets, that have chimed their measured cadences into our ears from earliest childhood, are of this class, examples of which are here cited. So marked is this quality of Hebrew poetry, as seen in the Bible, that it was declared, by a learned man of the last century, to be botanical poetry, and who states that

upwards of two hundred and fifty botanical terms can be found therein.

The glory of Lebanon, the excellency of Sharon, and the waving forests of Carmel have lent their aid to illustrate sacred themes.

The Lord is described as riding upon the wind, but his more gentle going is heard in the tops of the mulberry trees. The righteous shall cast his roots as Lebanon — they shall flourish like the palm tree — they shall sit under their own vine and fig tree. The thorn shall give place to the fir tree, and the myrtle grow instead of the briar — and all the trees of the fields shall clap their hands.

The New Testament is not so rich in metaphor. The lily of the field, the grain of mustard seed, the wild and good olive tree, the seed sown in weakness but raised in power, are familiar examples.

The remarkable range of temperature of the land of Palestine, from the snow-clad summits of Lebanon and Hermon, to the coast plains and to the deep and almost tropical valley of the Jordan, is productive of a more varied vegetation than can be found anywhere within the same territory upon the surface of the earth. On her heights are to be found natives of the colder zones, while in the Jordan valley grow plants not to be found nearer than India.

The mountains abound in oaks, cedars and pines; while the palm, the fig and citron find a congenial home in the plains or lower declivities. Our familiar garden bulbs flourish along the water courses, and numerous species of Legumes and Labiates render the sandy regions less desolate.

Its anciently terraced and artificially watered hills were capable of a luxurious cultivation, and though now com-

paratively desolate, once supported a numerous population.

The region of ancient Jericho with its palms — the enchanting valley of Sechem — the gardens of Engedi — fig and olive groves and vineyards in great numbers, altogether impress us with its former wonderful fertility.

Immense grain fields and gardens of cucumbers and melons, each with its hut or lodge for the abode of a watchman, who remained during the ripening season to guard the fruit, were numerous and in some parts are still to be seen. Isaiah compares Zion "as desolate as a lodge in a garden of cucumbers."

The plants represented might be divided into plants ornamental; plants used for perfume or incense; fruits, grains, woods, &c.

Of ornamental plants, the ROSE, strange as it may appear, is not found in the Scriptures. The two solitary cases, in Isaiah and the Song of Solomon, where our version has the word Rose are thought to indicate a bulbous plant — an *Amaryllis* or *Narcissus*. The Rose of Sharon is therefore supposed to be the *Narcissus Tazzeta*, a plant that freely abounds in the wilds of Sharon. The Rose of the Apocrapha is supposed to refer to a shrub, extremely common around the Sea of Gallilee and the water courses of that country generally, that is the *Nerium Oleander*, well known and cultivated among us.

Our native Apocynæ are of the same order with it, and all of them, though so beautiful, are more or less poisonous; indeed most milky-sapped plants should be regarded with suspicion. The sap of the Oleander is most virulently poisonous, and has even caused death. The powdered wood is sometimes used as a rat exterminator.

The LILY is the ornamental plant of Scripture; its flowers adorned, in relief, the brim of the Moulton

sea; and furnished Solomon in his wonderful song with one of its choicest images. The Lily of the Old Testament differs from that of the New. The Hebrew word "Shusan" (hence our name Susan) is thought to mean the *Nelumbium Speciosum*, a species of the Lotus, sacred and venerated by the Egyptian, Hindoo and Chinese. It is a water plant and once common in the rivers of Egypt and Syria. It is the most beautiful of all the Nymphaea, examples of which we have in our native water lilies and the famous Victoria Regia. The Lily of the New Testament, the Greek "Krina," is now understood to be the *Lilium Chalcedonicum*, a scarlet martagon, and not the Crown Imperial, as formerly supposed, which latter is a Persian plant, and never common in Palestine. The imported bulbs of this Lily [once compared to the scarlet robes of Solomon], can occasionally be purchased at the seed stores in Boston.

"Camphire with Spikenard."

"My beloved, is unto me a cluster of
Camphire in the vineyard's of Engedi."

The plant thus rendered *Camphire*, is believed to be the Henna plant of Egypt and Palestine, the *Lawsonia inermis*, a most beautiful and deliciously fragrant shrub, whose flowers have been used both in ancient and modern times as an article of luxury and adornment. It belongs to the Loosestrife family, types of which we have in our cultivated and native Lythrums.

The BALM OF GILEAD and that rendered MYRRH, are the exuded sap from two species of *Balsamodendron*, i. e. the *B. Gileadense* and *B. Myrrha*, belonging to the order Amyridacæ, the plants of which abound in balsamic juices and yield frankincense, olibanum, balsam copaiba and other fragrant resins and gums. This order belongs exclusively to tropical India, Africa and America. It has some alliance to the Orange tribe, but differing

greatly in its dry nut-like fruits. The Balm of Gilead is believed to be one of the earliest articles of commerce known, even as far back as the time of the patriarch Jacob, as the Midianite merchantmen, to whom Joseph was sold, were then on their way to Gilead to complete their camel loads with a choice supply of that costly balsam for the Egyptian market. It often sold for twice its weight in silver. It was cultivated only in the King's garden in Judea, the revenue from which belonged exclusively to the Crown.

Strabo speaks of it. Titus carried some of it to Rome. Pompey exhibited one of the trees in a triumphal entry. When Alexander visited Judea, one teaspoonful per day and seven gallons per year was the entire product.

FRANKINCENSE, so often mentioned in Scripture, is a gum from a tree of this same order with the last. It has been used from the remotest times by the Hebrews and Egyptians in their sacrifices. It exudes from the straight trunk of the *Boswellia-serrata*, a lofty tree, native of the mountains of Central India. Frankincense is still used as incense in Catholic churches, and somewhat as a medicine.

The LIGNALOE, *Aquilaria Agallochum*, or Eagle-wood, is found only in Asia. It grows sometimes to the height of one hundred and twenty feet. The heart-wood is loaded with aromatic properties, and is one of the most grateful of perfumes. It has been held more precious than gold. "All thy garments shall smell of myrrh, aloes and cassia."

This was one of the drugs, one hundred pounds of which Nichodemus brought after the Crucifixion, in which, with the linen clothes, was wrapped the body of our Lord; it was therefore a very costly preparation. We have no plant of more approximate affinity than our

hedge buckthorn. The aloe of the apothecaries is an entirely different article, and obtained from a plant of the lily tribe.

SPIKENARD, of the Valerian family has a most rare and agreeable perfume. Our garden Heliotrope and the Centranthus are of this order. Several of them yield a fragrance which intoxicates the cat tribe, and that from one of them is said to be sufficiently powerful to throw even man into convulsions.

The *Nardostachys Jatamansi*, of the mountains of upper India, seems conclusively proved by Sir William Jones and Dr. Royle, to be the plant which furnished the "Alabastar box of Spikenard very precious," with which Mary anointed the feet of Jesus, and which Judas declared might have been sold for three hundred pieces of silver; which price, among other unguents, is given by Pliny, who remarking on the extravagance of such preparations, says, "We have known the very soles of the feet sprinkled therewith." He also intimates the form of the alabastar ointment boxes.

"Spikenard and Saffron, Calamus and Cinnamon.—S. of S.

SAFFRON is the yellow Stigma of the *Crocus sativus*, or fall Crocus, belonging to the well known Iris family, very common in cultivation among us. Saffron was and still is used as a perfume, spice, confection, dye and medicine. Its collection required great patience, four thousand flowers yielding but one ounce, and the entire product of an acre for the season averaged but about ten or twelve pounds. It was formerly extensively cultivated at Welden in Essex, England, which hence has borne the name of Saffron-Welden.

A totally different plant, the *Carthamus tinctoria*, once familiar under the name of Saffron in our gardens, has been successfully used to adulterate the true Saffron.

Calamus aromaticus "the Sweet cane from a far country," is allied to our sweet vernal grass.

Cassia and *Cinnamon*, well known spices, were in the time of Ezekiel common articles of trade with the merchants of Tyre. They belong to a family of which our *Sassafras* and *Laurus benzoin* are examples. *Camphor* of commerce is from a tree of the same tribe.

The *Hyssop* and *Mustard* of Scriptures, around which many inquiries cluster, are not so satisfactorily identified by modern investigation as would seem reasonable to expect. The former is declared by the best authorities to be the *Capparis Egyptica*, or Caper plant, and not the officinal herb, Hyssop; the latter, the *Salvadora Persica*, a tree-like plant, sufficiently large for birds generally to lodge in its branches. Some still adhere to the common Mustard as that alluded to on two occasions by our Saviour. The uses of Mustard were well understood and described by Pliny, who was nearly cotemporary.

The FRUITS were identified and described. Among them the PALM tribe, a family acknowledged by botanists to be the princes of the vegetable kingdom, and to which, in Scripture, the righteous are most fitly compared. "They shall flourish like the Palm tree; they shall bring forth fruit in old age." The whole Palm tribe are of immense importance to the countries in which they grow. The *Date Palm* yields, year by year, an even crop of perhaps three or four hundred pounds, and that for a century together, scarcely ever materially failing.

The APPLE of Scripture is, without doubt, the Citron, *Citrus medica*. "A word fitly spoken is like apples of gold in pictures of silver," might be rendered, "like golden citrons in silver baskets," in allusion to a custom of the Jews of presenting that fruit in this manner at their sacred feasts.

The FIG, SYCAMORE-FIG and MULBERRY, of the *Morads*, a family peculiar for the manner in which their fruits are formed, being an aggregation of calices consolidated into round, succulent heads. The manner of the flowering of the fig, inside of the fruit, but having all the requisite organs of true flowers, was satisfactorily explained.

The OLIVE and VINE are among the most signal of the bountiful gifts of Providence, and would in their history and economy exhaust volumes, yielding as they do such indispensable products, as fruits, wine, oil, molasses, &c.

The ALMOND and POMEGRANATE, with the numerous texts in which they are mentioned, received a share of attention and were found full of interest and instruction.

The CAROB-TREE, *Ceratonia siliqua*, with its sweet pods or husks, furnished food for the poor; but the copious crops of the tree were generally fed out to mules, asses and swine. No doubt this fruit is referred to in the parable of the prodigal son, upon which he was obliged to feed, "the husks that the swine did eat."

CUCUMBERS and MELONS are invested with great historical interest on account of the extent of their ancient cultivation and the great place they filled in the diet of the ancient Hebrews and Egyptians.

The LINTEL of Jacob and Esau; the PAPYRUS, from which paper was made, and which is alluded to in the epistles of John; the *Zysyphus*, the plant from which the "Crown of Thorns" was probably made, have each an interest peculiarly their own.

The TIMBER TREES of the country, and such as were used in the building of Solomon's temple, received a passing notice.

JONAH'S GOURD, ELIJAH'S JUNIPER, the mythical AP-

PLES of SODOM, and the ROSE of JERICHO, received severally their share of explanation.

The foregoing plants were illustrated by colored representations, which served to fix their identification in the mind, and added greatly to the interest of the subject.



REGULAR MEETING, MONDAY, JANUARY 3, 1870.

The President in the chair. Records of preceding meeting read.

Mr. GEORGE D. PHIPPEN occupied the hour with an account of the Plants mentioned in Scripture, identifying them with those known at the present day, and showing the affinities to our familiar native and cultivated species. [Printed on page 1.]

Hon J. G. WATERS made some remarks expressive of his great interest in what had been said by Mr. Phippen, and moved that the thanks of the Institute be presented to him for his interesting and instructive communication. Unanimously adopted.

Charles A. Farnum of Salem, and George E. Emery of Lynn, were elected members, and Mrs. Eleanor Forrester Condit of Newark, N. J., a corresponding member.

FIFTH MUSICAL ENTERTAINMENT, WEDNESDAY, JAN. 5, 1870.

1. DUETT—PIANO AND VIOLIN.

Selections from "Semiramide."

De Beriot & Facounier.

2. TRIO—"Ave Verum." *Kreutzer.*

3. SONGS—Baritone. a. "Romanze," . . . *Franz.*

b. "A Red Red Rose," . . . *Schuman.*

4. PART SONGS. a. "The Curfew," . . . *H. Smart.*

b. "Waiting for the May," . . . *H. Hiles.*

5. SONG—Soprano, "Bid me to live," . . . *Hatton.*

6. QUARTETTE—"A te o cara," "from Puritani," . . . *Bellini.*

7. SYMPHONY NO. 7—PIANO AND VIOLIN, . . . *Beethoven.*

Allegretto—Presto.

8. DUETT—"Da che tornaste," . . . *Donizetti.*

9. SONG—Soprano, "Across there at the window," . . . *Mohring.*

10. MALE QUARTETTE—a. "Spring Night," . . . *Fischer.*

b. "Slumber Soft," . . . *Mohring.*

11. DUETT—"What makes the Spring," . . . *Aft.*

12. SESTETTE—"Chi mi frena," from Lucia," . . . *Donizetti.*

REGULAR MEETING, MONDAY, JANUARY 17, 1870.

The President in the chair. Records of preceding meeting read.
The Secretary reported the following correspondence.

J. F. A. Adams, Pittsfield, Jan. 12; Jacob Batchelder, Lynn, Jan. 16; John A. Battis, Salem, Jan. 13; T. Apoleon Cheney, Watkins, N. Y., Jan. 6; George E. Emery, Lynn, Jan. 15; G. L. Goodale, Brunswick, Me., Jan. 12; A. C. Hamlin, Bangor, Me., Dec. 21, 24; P. A. Hanaford, Reading, Jan. 12; Leeds Philosophical and Literary Society, Aug. 21, 1869; Mannheimer Verein fur Naturkunde, August, 1869; Museum, Bergen, Norway, Nov. 18, 1869; Russell and Erwin Manufacturing Co., New York, Dec. 20, 1869; South African Museum, Cape Town, Dec.; Société de Physique and d'Histoire Naturelle de Genève, Sept. 8, 1869; W. Hudson Stephens, Lowville, N. Y., Jan. 14; C. M. Tracy, Lynn, Jan. 12; Charles Vose, Boston, Jan. 5; J. K. Wiggin, Boston, Nov. 30, 1869; George D. Wildes, Riverdale, N. Y., Jan. 13; John Wilson & Son, Cambridge, Jan. 7.

The Librarian announced the following additions.

By Donation.

- BEMIS, LUKE, of Boston. Pennant's Arctic Zoology, 4 vols. 4to, London, 1792.
BUTLER, BENJ. F., M. C. Report of the Commissioner of Agriculture for 1868, 1 vol. 8vo. Monthly Report of the Department of Agriculture for Nov. and Dec., 1869, 8vo pamph.
COLUMBIAN ASSOCIATES. Portland Transcript for 1868, 1869. New York Mercury for 1869.
GARFIELD, J. A., M. C. Report of the Librarian of Congress for 1869, 8vo pamph.
GREEN, SAMUEL A., of Boston. Miscellaneous pamphlets, 14.
GROVESNOR, DANIEL P. Miscellaneous pamphlets, 29.
KIMBALL, JAMES. Jewett's Lectures and Writings on Temperance, 1 vol. 12mo. Boston, 1849. The Trojan Sketch Book, 1 vol. 12mo, Troy, 1846.
LANGWORTHY, I. P., of Boston. Reports of British and Foreign Bible Society, 13 pamphlets, 8vo London, 1814, etc. Reports of American Tract Society, 10 pamphlets, 8vo, Boston, 1856, etc. Bible Society Records, 61 numbers. Miscellaneous pamphlets, 59.
LEE, JOHN C. Commercial Bulletin for December, 1869.
LINCOLN, SOLOMON, of Hingham. Transactions of the Hingham Agricultural and Horticultural Society for the year 1869.
PALFRAY, CHARLES W. Miscellaneous pamphlets, 30.
RICHARDSON, E. S. L., of Oswego, Ill. The Chicago Tribune, 7 numbers.
STONE, BENJ. W. Joseph H. Ramsey against the Erie Railway Company and others, 8vo pamph., New York, 1869.
VERRILL, A. E., of New Haven, Conn. Synopsis of the Polyps and Corals of the North Pacific Exploring Expedition, 8vo pamph., 1869.
WATERS, J. LINTON, of Chicago, Ill. Parks in the West Division of the City of Chicago. Second Annual Report of Chicago Relief and Aid Society. Peregrine Pickle and Polinto's Christmas Papers, 3 pamphlets, 8vo, Chicago, 1869.

By Exchange.

ACADEMIA DELLA SCIENZE DELL' ISTITUTO DI BOLOGNA. Universalità dei mezzi di previdenza, difesa, e salvezza per le Calamità degli Incendi. Opera Premiata in Concorso dalla Accademia della Scienze dell' Istituto di Bologna. Scritta da Francisco del Giudice, Royal 8vo, Bologna, 1848.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, vol. xiii, sig. 10, 11.

LEEDS PHILOSOPHICAL AND LITERARY SOCIETY. Forty-ninth Report of the Council at the Close of the Session, 1868-9.

MASSACHUSETTS CHARITABLE MECHANIC ASSOCIATION. Eleventh Exhibition at Faneuil and Quincy Halls, Boston, September and October, 1869.

NATURWISSENSCHAFTLICHEN GESELLSCHAFT ZU CHEMNITZ. Erster Bericht der naturwissenschaftlichen Gesellschaft zu Chemnitz, 1859-1868, 2 pamphlets, 8vo, Chemnitz, 1865, 1868.

NEW YORK HISTORICAL SOCIETY. Historic Progress and American Democracy; an address by J. L. Motley, 8vo pamph., New York, 1869.

NEW YORK LYCEUM OF NATURAL HISTORY. Annals for December, 1869.

PUBLISHERS. American Journal of Numismatics. American Literary Gazette. American Publisher and Bookseller. Book Buyer. Canadian Naturalist. Christian World. Cosmos. Eclectic. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Hardwick's Science Gossip. Haverhill Gazette. Journal de Conchyliologie. Land and Water. Lawrence American. Lynn Reporter. Medical and Surgical Reporter. Nation. Peabody Press.

SOCIÉTÉ DE PHYSIQUE ET D'HISTOIRE NATURELLE DE GENÈVE. Mémoires de la Société de Physique et d'Histoire Naturelle de Geneve. Tomes, xix, xx, 1868-69, 4to.

VEREIN FÜR NATURKUNDE ZU MANNHEIM. Funfunddreissigster Jahresbericht des Mannheimer Vereins für Naturkunde. Erstattet in der General-Versammlung vom 20 February, 1869.

The Superintendent announced the Donations to the Museums of the Institute and Academy.

Prof. F. H. BRADLEY. Fossils of the Clintons, from Indiana.

EDWARD E. CHEVER. Fossil wood, from near Colorado (the place is known as the Petrified Trees).

WM. S. COOK, Salem. Chinese Copper Coin of the new Hong Kong currency; value one mill,

Dr. EASTMAN, Washington, D. C. Larva of a Wood Boring Beetle, from a decayed Chestnut stump near that place.

J. P. LEAVITT, Beverly. A Water Jar, from Palermo.

B. W. PATCH, Hamilton. Stone Axe and Arrowhead, from Hamilton.

HENRY W. PEABODY, Salem. Musk Deer, from Java.

L. H. P., Portsmouth, N. H. Two dried plants, from San Francisco, Cal.

J. L. RUSSELL, Salem. Hottentots Figs (Fruit of the Mesembryanthemum acifolium).

The PRESIDENT stated that Mr. Charles Davis of Beverly, an associate member, died very suddenly at his residence, on Friday last, and that several officers and members of the Institute had attended the funeral this afternoon.

The deceased having always taken a deep interest in the objects of the Institute, and having been for several years an active member, and one of its officers, it is highly proper that suitable notice should be taken of this sad and melancholy event.

On motion of Mr. JAMES KIMBALL, a committee of three, consisting of Messrs. W. P. Upham, James Kimball and R. R. Endicott, was ap-

pointed to prepare appropriate resolutions, and to recommend such farther action as may be required.

Mr. F. W. PUTNAM exhibited a fish, *Hemirhamphus longirostris*, taken off Nantucket. This specimen was captured by Mr. Augustus Welcome of Nantucket, and given to Francis Gardner, Esq. of Boston, by whom it was presented to the Museum. It possesses great interest, being the first specimen of this species, heretofore known, beyond the limits of the Indian Ocean.

Mr. W. P. UPHAM exhibited a map of the "Common Lands of Salem in 1720," which was found in the Old Lynde House, corner of Liberty and Essex streets, Salem (taken down in 1836), and presented to the Institute by Mr. Robert Peele. He spoke at some length on this subject. Several others also made remarks.

Mr. W. P. UPHAM also exhibited an original subscription paper, accompanied by a letter from Dudley Atkins Tyng, soliciting aid to educate and improve the condition of the inhabitants of the Isles of Shoals, after their sufferings caused by the Revolution. An added value is given to these papers, by the very interesting article on the Isles of Shoals, that has recently appeared in the Atlantic Monthly.

Subscription Paper for the Isle of Shoals.

BOSTON, Sept. 17, 1801.

The people on the Isles of Shoals, having by the humane exertions of Dudley Atkins Tyng, Esq. and others, been recovered from a state of the most deplorable ignorance, vice and wretchedness, and the Society for propagating the Gospel having employed Mr. Josiah Stevens as a missionary and schoolmaster upon these islands, for whom and his successors in office it is absolutely necessary to erect a small dwelling house which will cost about one thousand dollars:

The subscribers, desirous of promoting the cause of virtue, religion and humanity, and commiserating the unhappy people on the Isles of Shoals, especially their children, do agree to pay the sums annexed to their names for the purpose of building a dwelling house for the use of the minister or missionary residing on the Isles of Shoals forever.

Mr. Tyng's letter accompanies this subscription paper. The money to be paid to the treasurer of the Society for propagating the Gospel to be appropriated to the object.

[SIGNED BY]

William Phillips, Jr., Samuel Salisbury, Stephen Higginson, Stephen Higginson Jr., K. Boott, S. K. Jones, N. Lee, William Pratt, Francis Amory, Gard. Greene, Adam Babcock, Jona. Davis, N. Frazier, Benjamin Bussey, Jr., Samuel G. Perkins, James Perkins, Joseph Coolidge, S. Salisbury, Jr., I. P. Davis, Samuel Parkman, Thomas C. Amory, John Amory, T. H. Perkins, S. P. Gardner, P. C. Brooks.

[Whole amount subscribed, \$706.]

Mr. Tyng will collect the remaining sum at Newburyport.

Letter from Dudley A. Tyng.

NEWBURYPORT, Sept. 1, 1801.

MY DEAR SIR:—You are not ignorant of the interest I have taken in the reformation and civilizing of the people inhabiting the Isles of Shoals. It is impossible by words to convey any idea of the extreme poverty, ignorance and vice these people had sunk into. The islands had been deserted by all who had means to leave them. No one cared for the instruction or comfort of those that remained. The children were growing up without one virtuous or religious sentiment. Drunkenness, profanity and idleness overwhelmed the whole community. The liberality of well disposed persons furnished means for erecting a commodious stone house, to serve them as a school house and as a place of worship. It also serves, by means of a tower on its top, as a very useful beacon for vessels arriving on the coast.

The Society for propagating the Gospel have employed the Rev. Josiah Stevens since April last, as a missionary, to teach the children and to lead in the exercises of the Sabbath. His piety, patience, mildness and industry, have already wrought wonders. Children who did not know their letters, now read intelligibly in their Bibles, and those who never held a pen before, now write a legible joining-hand. Cleanliness and decorum have kept pace with their improvement in their school exercises. They are delighted with their new state, and their ambition is kindled. Their language has, in a good measure, lost its profaneness, and there is a consoling prospect of their recovery to decent and virtuous habits, should attention be still continued to them.

You need not to be told how great satisfaction I derive from this state of things, nor how much anxiety I feel for its continuance and improvement.

Mr. Stevens is precisely the man to be desired for this situation. He perceives it himself, and this has reconciled him to the idea of continuing in it, notwithstanding his extreme disgust from the dirt and vice of the people amongst whom he is placed, on condition only that a small house can be provided for his accommodation. He has hitherto resided on another island than that on which the meeting house is, and where almost all the people live. The passage across is always inconvenient, and at some seasons hazardous. There is a public lot near the meeting house, on which such a house could be built. Less than \$1000 would complete it. Charity never found a more inviting or a more promising object. Say, then, if such a sum cannot be raised from the wealth, the piety and the benevolence of those with whom you associate. You may assure them that in a very short time, they shall receive accounts of the improved condition of these wretched people, which shall make their hearts thrill with pleasure.

Your affectionate servant,

DUDLEY A. TYNG.

John O'Donnell and Charles A. Shepherd, both of Salem, were elected resident members.

DEFICIENCIES IN THE THE LIBRARY.

It is intended to publish from time to time, lists of deficiencies in the library; hoping that those friends of the Institute who may notice the same, will be induced to aid in completing the sets. Any number or volume, not designated (within brackets) under any title, will be acceptable.

DEFICIENCIES IN ALMANACS.

- THE CLERGYMAN'S ALMANAC, Boston [1809-1822].
 UNITARIAN REGISTER, Boston [1846-1858].
 UNITARIAN CONGREGATIONAL YEAR BOOK [1856-1858, 1867].
 ALMANAC AND BAPTIST REGISTER, Philadelphia [1841-1852].
 AMERICAN BAPTIST ALMANAC, Philadelphia [1860].
 THOMAS' (R. B.) FARMER'S ALMANAC, Boston [1793-1863].
 METHODIST ALMANAC, New York [1858, 1860, 1861].
 GEORGE'S (DANIEL) CAMBRIDGE ALMANAC or ESSEX CALENDAR, Salem and Newburyport [1776, 1778-1781, 1783, 1784].
 RUSSELL'S (E.) AMERICAN ALMANAC, Danvers and Boston [1780-1782].
 CARLTON'S (OSGOOD) ALMANAC, Boston [1790-1797].
 BICKERSTAFF'S BOSTON ALMANAC [1768, 1769, 1773-1775, 1777-1779, 1784-1788, 1791, 1792, 1795].
 WEBSTER'S CALENDAR. or THE ALBANY ALMANAC [1829, 1832, 1847-1866, 1868].
 NEW ENGLAND FARMER'S ALMANAC, by Dudley Leavitt, Exeter and Concord, N. H. [1819-1821, 1823, 1826-1827, 1830-1867].
 UNIVERSALIST'S REGISTER, COMPANION and ALMANAC, Utica, N. Y., Boston [1839-1842, 1849, 1852, 1855, 1857-1866].
 WHIG ALMANAC, New York [1844-1853, 1856].
 TRIBUNE ALMANAC, New York [1857, 1859-1866].
 LOW'S (NATHANIEL) ALMANAC, Boston [1770, 1772-1821, 1824, 1825, 1827].
 CHURCHMAN'S ALMANAC, New York [1830, 1834, 1837].
 THE CHURCH ALMANAC, New York [1841, 1843, 1846, 1848-1862, 1864, 1866, 1867].
 THE PROTESTANT EPISCOPAL ALMANAC, New York [1860, 1862, 1863, 1864].
 SWORD'S POCKET ALMANAC, New York [1831, 1839].
 THOMAS' (ISAIAH) ALMANAC, Worcester [1788-1791, 1793, 1796-1808, 1811-1816, 1818-1822].
 SPOFFORD (THOMAS) ALMANAC, Haverhill, Exeter, Boston [1817-1824, 1826, 1829, 1831-1838, 1841, 1842, 1844, 1846].

DEFICIENCIES IN DIRECTORIES.

- BANGOR, by S. S. Smith [1843, 1848, 1855, 1859]; by Symonds, Chase & Co. [1869].
 LEWISTON AND AUBURN DIRECTORY, by Stanwood [1860, 1864].
 PORTLAND DIRECTORY, by S. Colman [1831]; A. Shirley [1834]; REFERENCE BOOK AND DIRECTORY, by Becket [1846, 1847-8, 1850-1, 1852-3, 1856-7, 1858-9, 1863-4, 1866-7]; ALMANAC AND REGISTER, by C. A. Dockham [1860].
 SACO AND BIDDEFORD BUSINESS DIRECTORY [1849, 1856-7].
 CONCORD, N. H., DIRECTORY, by Hoag and Atwood [1830]; D. Watson [1856];
 DOVER, N. H., DIRECTORY, by Stevens [1833]; by J. S. Hayes [1859-60].
 MANCHESTER, N. H., ALMANAC AND GENERAL BUSINESS DIRECTORY [1850];
 DIRECTORY [1854, 1858, 1860, 1864, 1866, 1869].
 NASHUA, N. H., DIRECTORY, by Greenough [1864-5].
 PORTSMOUTH, N. H., DIRECTORY, by Penhallow [1821]; by Brewster [1851]; by Greenough [1864].

BURLINGTON, Vt., DIRECTORY, by Hart [1865-6, 1866-7, 1867-8].

BOSTON, MASS., DIRECTORY, by John West [1796]; by E. Cotton [1805, 1807, 1810, 1813, 1816, 1818]; by Frost and Stimpson [1822, 1826, 1827]; by Hunt and Stimpson [1828]; by Charles Stimpson, jr. [1829, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846]; by George Adams [1846-7, 1847-8, 1848-9, 1849-50, 1850-1, 1851-2, 1852-3, 1853-4, 1854-5, 1856, 1857]; by Adams, Sampson & Co. [1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868]; by Damrell and Moore [1857]; by Dean Dudley [1863-4]. OF ENVIRONS, by G. Adams [1848, 1849].

BRISTOL COUNTY, MASS., ALMANAC, by G. Adams [1852].

CAMBRIDGE, MASS., DIRECTORY, by G. Adams [1847]; by J. Ford [1848, 1849, 1850, 1851, 1853, 1854, 1856]; by J. D. Baldwin [1859]; by D. Dudley [1865-6, 1866-7].

CHARLESTOWN, MASS., DIRECTORY, by A. Quimby [1834]; by Fletcher [1848]; by Adams, Sampson & Co. [1860, 1862, 1864, 1866].

CHELSEA, MASS., DIRECTORY, by John Dent [1852, 1858, 1860].

ESSEX COUNTY, MASS., DIRECTORY, by Briggs, & Co. [1866, 1869-70]; by C. A. and J. F. Wood [1870].

FALL RIVER, MASS., DIRECTORY, by George Adams [1853, 1855, 1857]; by Adams, Sampson & Co. [1859, 1864, 1869].

FITCHBURG, MASS., ALMANAC AND DIRECTORY, by Shepley and Wallace [1857].

GLOUCESTER AND ROCKPORT, MASS., DIRECTORY [1869].

HAVERHILL AND BRADFORD, MASS., DIRECTORY, by A. K. Hill [1860-61].

LAWRENCE, MASS., DIRECTORY, by W. Filmer [1848, 1851, 1853-4]; by G. Adams [1857]; by Adams, Sampson & Co. [1859, 1864]; by Sampson, Davenport & Co. [1866, 1868-9].

LOWELL, MASS., DIRECTORY, by B. Floyd [1832, 1836]; by G. Adams [1851, 1853]; by Adams, Sampson & Co. [1858, 1861]; by S. A. McPhetres [1864-5]; Sampson, Davenport & Co. [1866].

LYNN, MASS., DIRECTORY, by C. F. Lummus [1832]; by B. F. Roberts [1841]; by A. Lewis [1851]; by George Adams [1854, 1856, 1858]; by T. Herbert [1858]; by Adams, Sampson & Co. [1860, 1863, 1865, 1867].

NEW BEDFORD, MASS., DIRECTORY, by H. H. Crapo [1836, 1849, 1852]; by Dudley and Greenough [1867-8].

NEWBURYPORT, MASS., DIRECTORY, by Wooster Smith [1849, 1850]; by John E. Tilton [1851]; by George Adams [1852]; by Dockham and Brown [1853]; by C. N. Haskell [1858, 1860]; by Sampson, Davenport & Co. [1866].

NEWTON, MASS., DIRECTORY, by C. C. Drew [1868].

NORTHAMPTON, MASS., BUSINESS DIRECTORY, by Trumbull and Greer [1850-1].

PLYMOUTH COUNTY, MASS., DIRECTORY, by S. B. Pratt & Co. [1867].

PLYMOUTH, MASS., DIRECTORY [1851].

ROXBURY, MASS., DIRECTORY, by G. Adams [1848, 1854, 1856]; by Sampson, Davenport & Co [1860, 1862].

SALEM, MASS., by H. Whipple [1837, 1842, 1846]; by G. Adams [1850, 1851, 1853, 1855, 1857, 1859, 1861, 1864, 1866, 1869].

SPRINGFIELD, MASS., DIRECTORY, by Valentine W. Skiff [1848]; by J. M. Newcomb [1858-9]; by S. Bowles & Co [1860-1, 1862-3, 1864-5].

TAUNTON, MASS., DIRECTORY, by G. Adams [1857]; by Adams, Sampson & Co. [1859, 1861, 1864, 1869].

WORCESTER, MASS., ALMANAC AND DIRECTORY, by H. J. Howland [1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869].

PUBLICATIONS

OF THE

ESSEX INSTITUTE, AND PEABODY ACADEMY OF SCIENCE,

SALEM, MASS., 1870.

PROCEEDINGS of the Essex Institute. 8vo:—

Vol. I. 1848-56.	Paper covers,	\$2 00; in cloth,	\$3 00
" II. 1856-58.	" "	2 00; " "	3 00
" III. 1858-63.	" "	2 00; " "	3 00
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" V. 1866-67. (4 plates.)	" "	6 00; " "	7 00
" VI. 1868. (Now printing.)	" "	3 00; " "	4 00

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[These volumes contain a large number of descriptions and figures of new species, especially of Corals, Insects and Polyzoa; and many valuable papers on Natural History. The first three volumes also contain many important Historical papers. In addition to the papers on special subjects, the volumes contain the proceedings of the meetings of the Institute, the records of additions to the library and museum, and many important verbal communications made at the meetings, etc. The *Naturalist's Directory* is also issued under the same cover with vols. IV and V. Vol. VI. now printing, will close the series.]

THE BULLETIN OF THE ESSEX INSTITUTE. 8vo.

Monthly parts. Commenced Jan., 1869. Per annum, . \$1 00

[The Bulletin takes the place of the Proceedings of the Institute, which close at the date of the commencement of the Bulletin. This publication will contain all the short communications of general interest, both of an Historical and Scientific character, made at the meetings of the Institute, and the record of the meetings and business of the Institute.]

HISTORICAL COLLECTIONS of the Essex Institute:

Vol. I. 1859.	Small 4to.	In numbers,	\$3 00; in cloth,	\$4 00
" II. 1860.	" "	" "	2 00; " "	3 00
" III. 1861.	" "	" "	2 00; " "	3 00
" IV. 1862.	" "	" "	2 00; " "	3 00
" V. 1863.	" "	" "	2 00; " "	3 00
" VI. 1864.	" "	" "	2 00; " "	3 00
" VII. 1865.	" "	" "	2 00; " "	3 00
" VIII. 1866.	" "	" "	2 00; " "	3 00
" IX. 1868. (Vol. 1. of 2d ser.)	8vo.	{ Paper covers, 3 00		
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MEMOIRS of the Peabody Academy of Science. Imperial 8vo, tinted paper. FIRST MEMOIR, *Revision of the Large, Stylated,*

Fossorial Crickets, by S. H. Scudder. Steel plate. 1869. . \$1 25

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ANNUAL REPORTS of the Peabody Academy of Science. 8vo.

First Report of the Trustees and Council, 1869. . \$0 50

[These reports will contain a full account of the executive work of the Academy in carrying out its objects. The record of additions to its museum and library; the condition of the various collections, etc. They will also contain papers of scientific importance, such as catalogues and descriptions of specimens received at the Academy, and short papers of a character not suitable for the Memoirs.]

THE AMERICAN NATURALIST. Monthly. Subscription

per annum, \$4 00

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2. SALEM, MASS., FEBRUARY, 1870. No. 2.
One Dollar a Year in Advance. 10 Cents a Single Copy.

HYBRID GRAPES.

BY CHARLES H. HIGBEE.

THERE are three species of the grape indigenous to New England, viz.:— *Vitis Labrusca* (Northern Fox Grape); *Vitis aestivalis* (Summer grape); and *Vitis cordifolia* (Winter Grape); as classified by Gray. Probably they have not changed much, if any, in their peculiar characteristics for centuries, or since that unknown distant time when species were first so constituted. Although these species have innumerable varieties, that have slight differences of fruit, foliage or habit, yet the great points of semblance are always preserved, and any one familiar with these points, can easily tell to which species any specimen belongs. By the laws of nature they are maintained, and any change from her standard she looks upon with aversion. The whole life and energy of a plant is devoted to reproducing its kind, and it gives to its offspring the predisposition for its own qualities.

Until lately the wild kinds have been somewhat cultivated, and almost every garden, twenty years since, con-

tained one or more. The kind usually grown was the Labrusca, and is familiarly known by every one. It has a peculiar flavor, that is pleasant in the early stages of its ripening; but at maturity, is strong and disagreeable to most persons. This strong flavor is called by the fruit growers "foxy," and by others "grapey." The Labrusca bears the most palatable fruit of the three named species.

At the present time, we rarely find the native kinds in cultivation, but they can be found along our country road-sides, pastures and swamps. The varieties of the *V. vinifera* (European Grape), have been frequently tried in various places in this country, have not flourished and likewise have been discarded. But a race of good grapes has appeared, one by one, beginning with the Isabella, which was first circulated in 1818.

With all the plants and animals that man has domesticated, he has developed those qualities and parts most necessary to his wants and desires, and he can do this by *selection*, and giving to the subject all the conditions that make it flourish. When the wild grapes were domesticated, a change began, and having induced a vine to take one step forward in its fruit, according to the theory of Darwin, by sowing the seed, selecting the most improved seedling and continuing the process, at last, we would have a perfect grape, excellent in every particular. This process is very slow. The experiments of Mr. George Haskell, of Ipswich, are very interesting on this point, and from them we learn how very slow is the process of improving by selection. He has raised thousands of seedlings of the wild grape in an open field, where they could not have any influence from other kinds, and raised several generations without any perceptible improvement.

It is very reasonable to suppose that the fine grapes of the Old World, and the Muscats, Black Hamburgs of our graperies, have attained to their present standard by this method, and it must have taken ages. No doubt from the earliest time they have constantly progressed. A quicker way of improving our native kinds, than by "successive selection," and one that I think has been the means of producing most of the various sorts now grown, is, by hybridizing, and in this way at once adding the accumulated excellence of the foreign kinds to our own.

To Edward S. Rogers of Salem, belongs the credit of first artificially hybridizing the grape. The idea first suggested itself to him in 1848, but was not acted upon until the spring of 1851. He crossed several varieties of pears, and hybridized the *V. Labrusca* with *V. Vinifera*.*

The vine taken was that of the kind called Mammoth Globe (a variety of the *V. Labrusca*), which he bought of a person from Lowell, in 1846. It stood at the end of his garden, bordering on Federal street, and may be seen now climbing over an old pear tree. The pollen was taken from some Black Hamburg and Sweetwater vines that were growing in the same garden. These were obtained of Samuel G. Perkins of Brookline, in 1834, and were grown for several years in the open air, and had borne several fine crops. The mildew began to trouble them, and in 1844 Mr. Rogers built the grape-house over them for their protection.

On account of the smallness of the grape flowers and the peculiarity of the corolla in opening at the base and remaining united at the top, forming a cap, which often

* I hereby make a distinction between a *cross* and a *hybrid*. The first is the offspring of two varieties of the *same* species, while the latter is from the union of two separate species.

fertilizes as it expands, the grape was supposed beyond the reach of any interference in regard to its reproduction. These did not prove to be obstacles to Mr. Rogers. His account of his work is found in the *Horticulturist*, Vol. 8, Nos. 2 and 3, pp. 86 and 119. I will not repeat it here.

At first he was laughed at for the attempt, and our most learned horticulturists and botanists declared it to be an absurdity. But by the time the young hybrids began to fruit, he had several believers. In 1856, the vines that had grown in the original place, fruited; the rest the following year. This year he recrossed the *hybrids* with the *V. Vinifera*, bringing vines bearing fruit, nearly identical with the foreign kinds. The fruit of No. 4 of the first lot crossed with the Muscat, has the peculiar flavor of the Muscat.

It seems very remarkable that so large a number of fine grapes have appeared within the last fifteen years, and particularly within the last twenty. And as shown by the experiments of Mr. Haskell, and by the laws of reproduction, as far as they are known, it seems that the cultivated kinds are not simply improved seedlings, but are natural *hybrids*. Then, too, we do not find the gradually ascending scale of excellence that might be expected, if they came by progression. Between the wild *Labrusca* and the *Isabella*, *Catawba*, &c., there is a very wide difference. The seedlings of these kinds all tend back towards the original, and are much inferior to their parents, who have been elated by a favorable alliance. Again, the hybrids of Mr. Rogers' raising, resemble the "improved seedlings." No. 15 is frequently compared with the *Catawba*. Now all the attempts to cross the "improved seedlings" has resulted in producing grapes, so near the foreign kinds, as to be nearly or entirely worthless for

open air culture in our climate, and closely resembling them in every particular. This was the same with Mr. Rogers' second crosses, as he calls them.

The introduction and dissemination of the European grapes has brought together the two species, and the result is, that every year we hear of a new grape springing up in some old garden. There has always been an uncertainty as to the origin of the common varieties, and I can find nothing in their history that conflicts with the views herein given.



REGULAR MEETING, MONDAY, FEBRUARY 7, 1870.

The President in the chair. Records of preceding meeting read.

The Secretary announced the following correspondence.

Accademia delle Scienze, Bologna, May 15, 1869; C. M. Barton, Worcester, Jan. 19, 21; W. T. Brigham, Boston, Jan. 20, 24; A. C. Hamlin, Bangor, Me., Feb. 1, 2; Ferdinand D. Hsley, Newark, N. J., Jan. 31; Linnæan Society, London, Sept. 25, 1869; N. H. Morrison, Baltimore, Md., Jan. 19; E. Steiger, New York, Jan. 10.

The Librarian reported the following additions to the Library.

By Donation.

ANDOVER THEOLOGICAL SEMINARY. Catalogue of the Officers and Students for 1869-70, 8vo pamph.

BUTLER, BENJ. F., M. C. Speech of Hon. H. L. Dawes in U. S. H. R., on Economy of Public Expenditures. Speeches of Hon. B. F. Butler in the U. S. H. R., on Public Expenditures of Grant's Administration.

CUTTS, MARY P. S. Life and Times of Hon. William Jarvis, of Weathersfield, Vt., 1 vol. 8vo, New York, 1869.

HARVARD UNIVERSITY. Medical Department. Eighty-seventh Medical Course, 8vo pamph., Boston, 1870.

LEE, JOHN C. Commercial Bulletin for January, 1870.

SUMNER, CHARLES, U. S. Sen. Speech of Hon. Charles Sumner in U. S. Sen., Jan. 12, 1870, 8vo pamph.

TRUAIR & SMITH, of Syracuse. Syracuse and Onondaga Directories for 1868, 1870, 2 vols. 8vo.

WATERS, J. LINTON, of Chicago. The Weekly Mississippi Valley Review and St. Louis Journal of Commerce, Jan., 1870, 4to pamph. Fifteenth Ann. Rep. of Board of Education, of Chicago, 8vo pamph., 1869. Illinois Central Directory for 1869, 1 vol. 8vo.

WOOD, C. A. & J. F. Directory of Essex County for 1870, 1 vol. 8vo, Boston, 1870.

WOODWARD, R., of Worcester. Worcester Directory for 1866, 1867, 1868, 3 vols. 8vo.

By Exchange.

AMERICAN ANTIQUARIAN SOCIETY. Proceedings at the Annual Meeting. Oct. 21 1869, 8vo pamph.

AMERICAN PHILOSOPHICAL SOCIETY, Philadelphia. Proceedings, Vol. xi, No, 82. 8vo pamph.

ARCHIV FÜR ANTHROPOLOGIE. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen, 4to pamph., Braunschweig, 1869.

BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles, Nov. 15, 1869, 8vo pamph., Genève.

BOSTON PUBLIC LIBRARY. Seventeenth Annual Report of the Trustees, 1869, 8vo pamph.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, Vol. xiii, sig. 12.

MORAVIAN HISTORICAL SOCIETY. Transactions 1857 - 1869, 3 pamphlets 8vo, Bethlehem.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Address of the Hon. M. P. Wilder, at the Annual Meeting, Jan. 5, 1870, 8vo pamph.

PUBLISHERS. American Literary Gazette. Book Buyer. Christian World. College Review. Cosmos. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Lawrence American. L'Investigateur. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seaman's Friend. Silliman's Journal.

VERMONT STATE HISTORICAL SOCIETY. Proceedings, 8vo pamph., Montpelier, 1868. Oration by W. W. Grout, Nov. 4, 1869, 8vo pamph., Rutland, 1869. Address before Vermont State Agr. Society at Burlington, Sept. 16, 1869, 8vo pamph.

Mr. W. P. UPHAM, in behalf of the committee previously appointed, reported the following resolutions, which were unanimously accepted.

Resolved, That in the recent and sudden death of Charles Davis, Esq., of Beverly, the Essex Institute recognizes the loss of one of its most efficient members. His earnest devotion to its interests, his constant attendance at its meetings, the important aid he has often rendered by obtaining new members, and in other ways, and finally the liberal bequest by which he has laid a new foundation for the promotion of its objects, will cause his memory to be held in grateful and affectionate regard by this society. His constant and never failing fidelity was a marked feature of his life, as a member and officer of this and other societies; and his thoroughly honest and ingenuous character and genial disposition made him an agreeable associate and companion.

Resolved, That Robert S. Rantoul, Esq., be requested to prepare a memoir of Mr. Davis, to be read at some future meeting of the Society, and published in its Collections.

Resolved, That these Resolutions be entered upon our Records, and that a copy be sent to the family of the deceased.

The PRESIDENT alluded briefly to the history of horticulture in Salem, and expressed the hope that some person, ere long, would undertake the investigation of this subject and present the results at a future meeting.

Pear trees of great age in several gardens indicate that our ancestors, at an early period, were not unmindful of fruit culture.

George Heusler, a native of Landau, in the Province of Alsace, Ger-

many, may be considered as the first professional gardener in this vicinity. He came from Amsterdam to this country in 1780, bringing professional diplomas and recommendations. Soon after his arrival he commenced his horticultural pursuits in the employment of John Tracy of Newburyport, where he married. In 1790 he removed with his family to Salem, and continued the same avocation on the farm of E. Haskett Derby, in Danvers (now Peabody), and in many of the gardens of Salem, Danvers, and other towns of the county, until nearly the time of his decease, which occurred April 3, 1817, at the age of 66 years. He was highly esteemed as an intelligent, upright, kind hearted and religious man; and to him our people are indebted for the introduction of many valuable fruits, and for largely developing a taste for an occupation which has, from that time to the present, received much attention.

Ezekiel Hersey Derby was the third son of E. Haskett Derby, above mentioned, a name distinguished in the commercial annals of Salem as pioneers in the trade to the East Indies, which has contributed so largely to the wealth of this place, and opened a new field to the ever ready enterprise of its citizens. He was a graduate of Harvard, in 1791, and not having the family love of adventure on the ocean, marked out a new path for himself on land, in the pursuits of agriculture. Inheriting an ample fortune, he took possession of the family estate in South Salem, and about the year 1802, began to transform it, under his improving hand, into a delightful residence; the extensive garden and grounds, with the ponds, green-houses, borders of flowers, shrubbery, orchards and belts of forest trees, many of choice imported varieties, soon became one of the most agreeable features in our landscape, and will be pleasantly remembered long after the waves of an increasing population have destroyed every vestige. Here he passed the greater part of his active years in advancing his favorite studies and the objects of the Massachusetts Society for the Promotion of Agriculture, having been one of the founders and for many years a trustee. In our own County of Essex, his name holds a permanent and honorable place.

He died October 31, 1852, aged fourscore years less one day.*

The *Salem Gazette* of Friday, July 13, 1810, contains an interesting account of the opening of a flower of the Night Blooming Cereus (*Cereus grandiflora*) in the garden of E. H. Derby, on the Monday evening previous, and that several of the citizens were gratified with a sight of this rare, beautiful and magnificent flower, undoubtedly its first appearance in Salem. The next flowering of this plant which we

*See obituary notice in *Salem Gazette*, Tuesday, Nov. 2, 1852.—Genealogy of Derby Family in Essex Institute Historical Collections, Vol. iii, page 287.

have on record, is in the garden of J. F. Allen, in July, 1838. This specimen is now in a good state of preservation in the Museum.

On Thursday evening, June 25, 1840, Francis Putnam exhibited three flowers at the rooms of the Essex County Natural History Society. Since that time, every year several have expanded in the houses of Messrs. F. Putnam, C. Hoffman, and perhaps others.

Robert Manning* commenced his Pomological Garden in North Salem, in 1823. At the time of his death, it was unrivalled in the variety of fruits then cultivated, containing nearly one thousand varieties of pears, besides of apples, peaches, plums, cherries, some hundreds more; no precise number having been obtained; probably, including all kinds of fruits, not far from two thousand varieties. His principal object in the formation of this garden was rather to collect together the several varieties in order to identification, to test their qualities and to correct the nomenclature which had been in confusion, than to grow fine specimens or to originate new varieties; these did not much occupy his attention, although several varieties, particularly of cherries, are his seedlings and bear his name. He died October 10, 1842, aged 58, in the midst of his labors and usefulness. He was an enthusiastic and most accurate and discriminating pomologist, and so very familiar with the names and habits of the trees and the qualities of fruits, that he could readily identify at sight even the most rare kinds. He was one of the original members of the Massachusetts Horticultural Society,† and a regular attendant, with liberal contributions almost always labelled, at its earlier exhibitions. He was a man of great simplicity of character and liberality of disposition, freely imparting to others information which cost him much study and research. His labors in the cause of pomological science by the intro-

* *Robert Manning* was born at Salem, July 19, 1784; m. Dec. 20, 1824, Rebecca Dodge Burnham of Ipswich. His principal business in life, aside from his horticultural pursuits, was that of a stage agent; in this occupation several members of his family were largely interested. His sister Elizabeth was the mother of Nathaniel Hawthorne, who had such a brilliant and successful literary career; b. at Salem, July 4, 1804; gr. Bowdoin College, 1825; died at Plymouth, N. H., on a journey for his health, May 19, 1864. His father, Richard Manning, b. at Ipswich, May 29, 1755; m. Miriam Lord, May 30, 1776, and soon after removed to Salem; a blacksmith, stagekeeper and landholder; d. at Newbury while on a journey, April 19, 1813. His grandfather, John Manning, b. March 16, 1703, was the son of Thomas, b. in England, Feb. 11, 1664; admitted an inhabitant of Ipswich, Feb. 10, 1684-5; and d. May 14, 1737. Thomas Manning was the son of Richard Manning, who was baptized at St. Patrick's Parish, Dartmoor, England, in 1622; married Anstice Calley, and had seven children. The father died in England. The mother came over (a widow) with the children, who settled principally in Salem.

† See a series of articles on "Reminiscences of Massachusetts Horticultural Society," now being printed in *Tilton's Journal of Horticulture*, from the pen of John B. Russell, an original member.

duction into general use the best of varieties of fruits, fairly entitle him to be ranked among the public benefactors.

His example seemed to inspire others and to awaken a new interest in this pursuit. The neighborhood soon became famous for its gardens, in which his may be considered as the centre, around which the others crystallized and took form.

The operations in the garden were not suspended in consequence of his death, but were continued many years afterwards; the mantle having seemed to fall naturally upon his eldest son, *Robert Manning*, who inherited the horticultural zeal and tastes of the father; and, having such a prestige, and such an accumulation of experience, was enabled, though a young man, to advance greatly horticultural knowledge and to take a high rank among the horticulturists of the country.

John C. Lee commenced operations in the spring of 1831; John M. Ives in 1836, on the estate now owned by George F. Brown; Charles F. Putnam and brothers in 1841; Pickering Dodge, Francis Peabody, James Upton and others in succession. From these gardens many valuable and important contributions to the horticultural exhibitions in years past were received. Besides the culture of fruit trees, Messrs. Eben and Francis Putnam were successful in the cultivation of the rose, and of this flower no less than five or six hundred varieties bloomed in the month of June, constituting one of the chief attractions of the city some twenty and twenty-five years since. At the same period, and for many years before and since, the garden of Joseph S. Cabot was conspicuous for the magnificent display of tulips, comprising some six or seven hundred varieties, and for a large collection of choice herbaceous plants which kept a succession of blooms during the season.

On the 28th of July, 1853, flowered in the green-house of J. Fiske Allen on Chestnut street, a plant of the *Victoria Regia*, the great water lily of the Amazon, the seed having been obtained of Caleb Cope of Philadelphia, and planted in the early part of the December previous. The following season, 1854, Mr. Allen enlarged his house and tank, and flowered several plants of this lily—the seed of some were obtained from England and planted in March previous, the others from the American plant. The climate in this house being so modified by the surroundings that it was admirably fitted for the growth of other tropical plants; and Mr. Allen arranged a collection of fine orchids, *amaryllis*, *calla*, *nelumbium* and other species of lilies which grew well and produced beautiful flowers, and thus adding greatly to the attraction of this structure, which was for several weeks thronged with many visitors to witness the first blooming of the *Victoria* in the New England States. Mr. Allen has published the

results of his observations on this plant in a beautiful folio volume, finely illustrated by W. Sharpe, from specimens grown at Salem.

In 1843, Mr. Allen commenced the erection of his graperies on Dean street, which soon were greatly extended, so as to embrace several hundred feet of glass, and in which were grown about three hundred varieties of grapes, including several valuable seedlings; also peaches, cherries, and other fruits.

Charles Hoffman, William F. Gardner, William Dean, Richard West, Richard S. Rogers, William D. Pickman, and others, erected houses for the cultivation of flowers or the grape.

The Natural History Society, soon after its organization in December, 1833, opened its rooms for exhibitions of fruits and flowers. The first was held at the rooms on Essex street opposite Central street, on Friday, July 11, 1834, and was very creditable to our florists, many beautiful and some rare plants and flowers having been shown. The contributors were Stephen Driver, Jr., J. S. Cabot, Charles Lawrence, John M. Ives, Thomas Spencer, Mrs. G. S. Johonnot, the Misses Ashton and John Bertram. These exhibitions were continued on every Friday during the season, and among the contributors, besides those previously mentioned, were the names of Francis Putnam, George D. Phippen, Benjamin Creamer, W. F. Gardner, John C. Lee, N. Silsbee, Jr., B. H. Ives, E. H. Derby, Mrs. J. D. Treadwell, Robert Manning, William Dean, W. P. Richardson, and others. The success attending these first efforts, induced a continuance the following and successive seasons, with greater or less frequency, as circumstances would permit, until that of 1866, when from unavoidable reasons they were omitted, and since that time none have been held. May they be resumed the coming season with increased interest, and the horticultural department again take its former high position among the doings of the Institute.

In every exhibition special attention had been directed to have properly arranged a collection of the native plants of the county, then in flower, particularly those that are rare and curious, and are only found in the most inaccessible localities, thus affording all an opportunity to observe that portion of our flora not usually noticed in the ordinary walks.

The exhibitions, humble and unpretending in their origin, gradually increased in interest and attracted much attention, and undoubtedly have been the means of developing a more general and extensive taste for horticultural pursuits in this community. At the earlier exhibitions the contributions were small, afterwards gradually became more extensive, and at the one in September, 1850, one hundred and ninety-one individuals contributed two thousand dishes or baskets of fruit, consisting of six hundred and sixty-nine varieties.

In reviewing the several lists of contributions, a gradual change is perceptible by the introduction of new and the disappearance of old familiar species and varieties. The dahlia, once so conspicuous and exciting so much interest among cultivators, who numbered the varieties by hundreds, no longer holds that sway in the floral world. The plums, among our fruits, are scarcely seen, some twenty-five years since so fine and luscious in flavor, so attractive in appearance and in great variety.

The opening of communication with China and Japan have introduced, mainly through Mr. Fortune, the botanist, many beautiful shrubs and other plants, which add largely to the attractions of our gardens and lawns. An interesting and very valuable paper could be written on this subject, giving an account of the garden and its flowers during the first years of the exhibitions, and contrasting the same with those of the present day.

Having briefly noticed a few incidents in the history of horticulture in Salem, a theme so prolific in interesting materials, I now introduce to you our associate member, Mr. CHARLES H. HIGBEE, who will give some account of the experiments of Mr. Edward S. Rogers of this city, in the hybridization of the grape, which have resulted in the introduction of several choice and fine new varieties. It is a cause of gratulation that we have among us those who are now actively engaged in advancing this science, which in the past has enrolled so many names distinguished for their zeal, learning and general culture.

The remainder of the evening was occupied in the reading of an interesting paper by Mr. CHARLES H. HIGBEE, on the "Hybridization of Grapes," referring especially to the method adopted by Mr. Edward S. Rogers of Salem. (See an abstract of this paper on page 17.)

A discussion followed the reading of this paper, which was participated in by several members.

QUARTERLY MEETING, WEDNESDAY, FEBRUARY, 9, 1870.

The PRESIDENT in the chair. Records of preceding meeting read.

Nathaniel Ropes of Cincinnati, and Frank A. Fielden of Salem, were elected members.

The Secretary mentioned that Mr. Rantoul had given a favorable answer to the request of the Institute to read the memoir of the late Charles Davis, provided that he could have sufficient time to prepare the same.

REGULAR MEETING, MONDAY, FEBRUARY 21, 1870.

The President introduced Mr. EDWARD E. CHEVER of Chicago, Ill., a native of Salem, who gave an interesting account of the Indians of California, an abstract of which is here annexed.

*The Indians of California.**

THE name "Digger," which Fremont gave to the Indians that he found on the eastern slope of the Sierra Nevada, has been applied by the readers of Fremont's work to all the Indians in California.†

The name was really applicable to those whom he first met with, but not to the Indians living on the other side of the mountains, who spoke a different language and were more provident than those living on the great plains east of the Rocky Mountains.

The Indians of California, in 1849, were the more interesting to the ethnologist from the manner in which that country had been settled. The Jesuits, it is true, had been in Lower California for many years, and had established mission schools there, and a few Europeans had a short time before made scattered settlements in the Sacramento Valley, but the whole country was so remote from our frontiers, and inclosed by the intervening barriers of the Rocky Mountains and the snows of the Sierra Nevada Range, that it had been but little changed from its first discovery by the whites. Many Indian tribes were living in a perfect state of nature as the elk, deer or antelope that furnished them food. The children had their ears bored when quite young and small sticks inserted; these were exchanged from time to time for larger sticks, until a bone ornament, made from one of the larger bones of a pelican's wings carved in rude style, and decorated at the end with crimson feathers, could be worn permanently. This bone was about five or six inches long and larger in size than my little finger. The back hair of the men was fastened up in a net, and this was made fast by a pin of hard wood pushed through both hair and net, the large end of the pin being ornamented with crimson feathers, obtained from the head of a species of woodpecker, and sometimes also with the tail feathers of an eagle. The women used no nets for their hair, nor wore feathers as ornaments, excepting in the end of the bones used by both sexes for the ears, which I have already described.

An Indian could no more remember when he learned to swim than when he first stood on his feet. When the children were disposed to be good natured the girls petted them as kindly as our children tend dolls, but if they were cross, in spite of their caresses, they threw cold water in their faces until their tempers cooled. The girls fully

* It is but justice to our author to state that his familiarity with the language of the tribes during five years of friendly personal intercourse has given him a rare opportunity of forming a correct judgment of what these Indians really were before they were demoralized by contact with the whites. The author's remarks will be found published in full in the *American Naturalist* for May, 1870, with several illustrations. — EDS.

† The Indian tribes of the section I am describing, called themselves respectively, Sesum, Hocktem, Vubum, Hololipi, Willem, Tankum, and inhabited the valley of northern California, between the Sierra Nevada and the Coast Range.

equalled the boys in swimming or diving, and also used the paddle with skill sometimes even beating the boys in their canoe or foot races. Their winter quarters are dry and warm, but are rarely free from smoke, which the Indians do not seem to regard as an inconvenience. The outside is covered with earth and at least a half of the hut is below the surface of the ground. The inside shows strong posts supporting an arched roof made of poles bound with grapevines, and these covered with reeds and coarse grass secured by cords. A small hole in the roof serves as a chimney, and a low door, usually on the south side, is kept open excepting in stormy weather. A raised platform of poles and reeds holds the skins and blankets used for bedding. The hunting and fishing were done wholly by men, and some of the fishing was done at night when the women were sleeping at home. Much of the drudgery came to the women and seemingly with their consent. They said that a hunter needed a keen eye, a firm hand and a fleet foot; if he became stiff from hard work or lost his skill, his wife must suffer with him in his misfortunes, and it was best for each to do what each could do best.

An Indian to be judged fairly must be regarded as an Indian. Custom with them, as with civilized people, is law, and many of their customs have probably been transmitted with but little change from remote ages. Their religion is probably little changed from that of an earlier age. A Good Spirit is invoked to provide food and give prosperity, and evil spirits are to be propitiated. The oldest chief prays at certain seasons, morning and evening, outside of the council lodge, and sings in a monotone a few sentences only. This is not in words taken from their language, but is supposed to be intelligible to the Great Spirit. When special prayers are made for success in fishing or hunting the request is made in plain Indian. Although he prays constantly for success, he uses wonderful craft and skill to ensure it.

To illustrate the ease with which an Indian can provide food for himself, I saw one come to the bank of Feather River one afternoon and start a fire. Turning over the sod and searching under the logs and stones he found some grubs. Pulling up some light dry reeds of the last year's growth he plucked a few hairs from his own head and tied the grubs to the bottom of the reeds, surrounding the bait with a circle of loops. These reeds were now stuck lightly in the mud and shallow water near the edge of the river, and he squatted and watched the tops of his reeds. Not a sound broke the quiet of the place now; the Indian was as motionless as the trees that shaded him. Presently one of the reeds trembled at the top and the Indian quietly placed his thumb and finger on the reed and with a light toss a fish was thrown on the grass. The reed was then put back, another reed shook and two fish were thrown out; then still another and the fellow was soon cooking his dinner.

The Indians hunt for one kind of game only at a time, and each kind at a time that they can be taken most advantageously. When I saw every kind of game represented together at the Indian encampment in Bierstadt's painting of the Yosemite, I knew the camp had been introduced for effect, from the evident ignorance or disregard for the habits of the Indians.

It would consume too much space to describe all their implements, and many of them do not differ materially from those that were used by Indians in this section; among them were awls of bone, thread

of deer sinews, and cord which they used for their nets, bird traps, and blankets; this cord was spun from the inner fibre of a species of milk-weed. Their cooking utensils were made from the roots of a coarse grass. These roots grew near the surface of the ground, and in sandy soil can be pulled up in long pieces. The pulpy outside skin is removed and the inside is a woody fibre, extremely tough when green, and durable when made into articles for daily use. The Indian women split these roots into thin strips and keep them in water when they are making baskets and take out one at a time, as needed. The water basket is first started from a centre at the bottom, and is added to stitch by stitch, without a skeleton frame to indicate the intended size. A loose strip of grass root is added constantly as a new layer to the last rim, and this is sewed on with another strip of the same fibre to the finished work beneath, a bone awl being used to bore holes through the basket portion. The water baskets were durable and would hold hot water.* Water was made to boil in them by dropping in stones heated previously. The women skilfully used two sticks in handling hot stones or coals as we would tongs.

In bread making the women pounded the acorns between two stones, a hollowed one serving for a mortar, until it was reduced to a powder as fine as our corn meal. They removed some of the bitterness of the meal by scraping hollows in the sand and leaching it, by causing water to percolate slowly through it. To prepare it for cooking the dough was wrapped in green leaves and these balls were covered with hot stones. It comes out dark colored and not appetizing, but it is nutritious and was eaten with gratitude by Fremont's men in 1844. Fish and meat were sometimes cooked in this way. A salmon rolled in grape leaves and surrounded with hot stones, the whole covered with dry earth or ashes over night and taken out hot for breakfast, does not need a hunter's appetite for its appreciation.

Marriage among the California Indians was similar to that of other tribes in other parts of the country. Presents of sufficient value were given by the men to the girl's parents, and the bride might be given away without her knowledge or consent. They were naturally cheerful and attached to each other, and although polygamy was permitted, I knew only one chief who had two wives. These seemed to agree, although Waketo said of his family that it had "too much tongue."

In earlier days dancing among them was confined to ceremonies of different kinds. In some of these the women joined, forming themselves into a circle; but as only one step was used in a solemn way, accompanied by a half turning of the body, a stranger might be in doubt whether it was rejoicing or mourning. Within this circle the men danced with great activity, leaping across a fire burning in the centre, and yelling and singing whilst the women continued their solemn dancing, singing a low monotonous chant.

The Indians were inveterate gamblers and parties from one tribe would visit another for several days at a time and play day and night. The game was a sort of an "odd and even," as played by white children, the parties guessing as to the number and position of the sticks used in the game. The playing was accompanied by singing and beads were principally used for stakes.

In the treatment of diseases the Indians succeeded in a certain class of them, but failed altogether in others. The pain from a sprain or

*A shallow basket of their work, which has been in the Museum for several years, now holds cold water as perfectly as when it was made.

rheumatism would be drawn to the surface by burning the skin with fire. I can testify to a cure from this remedy. For headaches they pressed their hands on the head of the sufferer and sometimes cured it by gentle pressure. For other diseases they tried steam baths, especially for colds. When any internal disorder defied their treatment they immediately begged medicine from the whites.

In burying the dead a circular hole was dug and the body placed in it, in a sitting posture, with the head resting on the knees. If a man his nets were rolled about him and his weapons by his side. If a woman, her blanket enclosed her body, and a conical shaped basket, such as they carry burdens in, was put into the grave also, with the peak upwards.

The language of the California Indians is composed of guttural sounds, difficult to separate into words when spoken rapidly and hard to pronounce or remember. The counting is done, as with all primitive people I have met, by decimals. Children in reckoning call off the fingers and toes of both hands and feet as twenty, when wishing to express a large number. In counting ten the following words are used: Weekum, Paynay, Sarpun, Tchuyum, Marcum, Suckanay, Penimbom, Penceum, Peleum, Marchocom. If eleven is to be expressed it is Marchocum, Weekum or Ten one; Marchocum, Paynay, ten two, and so on to twenty which is Midequeum. The general term for man is Miadim, and for woman Killem, and for a child Collem. A boy is Miadim collem and a girl Killem collem. Although this seems to indicate a poverty of distinctive terms, yet when it is found that every animal, bird, insect and plant has its own name, it will be seen that there is no want of materials to supply a stranger with words for book making, if his tastes lead him in that direction.

After many years passed with these Indians, and having every opportunity to study their customs and character, I entertain pleasant recollections of their friendship which was never broken, and feel sadly when I realize that the improvements of the white men have been at the sacrifice of Indian homes and almost of the race itself.

It has been customary to attribute certain general qualities to whole tribes of Indians, and this has been done to those of whom I have written. I can only say, that no two Indians of my acquaintance were alike, and their mode of life would naturally develop individuality of character.

The charges of lying and stealing, as urged against them, have some foundation in fact, although the Indian might make some such defence as our soldiers made to the accusation of theft of honey and chickens while marching through the South during our war. They did not steal, they *took* what they wanted and expected to live on the enemy. No Indian can steal from his tribe, however, without losing his character, and their desire to have position in the tribe makes both men and women as careful of their reputations as those of civilized life.

Indian cunning even has not proved equal to the duplicity of the white man. You may have heard of the Indian who offered his beaver skins for sale to a trader in olden times in one of our Puritan villages, when the trader was on his way to church. The trader would not purchase then, but in a whisper stated a price. When the church was dismissed the Indian followed the trader home and demanded payment for his skins, but was forced to accept a less price than was first named. The Indian took the money but told an ac-

quaintance that he had discovered the use of the big meeting at the church,—“it was to lower the price of beaver skins.”

As a white man I take the side of the pioneer in defence of his family, but I wish the Indians could have been spared much of the degradation brought upon them by bad white men that must eventually end in complete subjection, or extermination.

On motion of Mr. HYATT a vote of thanks was passed for the very interesting paper, and referred to the publication committee.

Mr. ROBERT PEELE presented a musket, an interesting relic, with the following statement:—“Muskets of this pattern were formerly used by the non-commissioned officers of the English army, in addition to side arms; the breach is made more crooked than the common musket or the King’s-arm, and is formed to fit the back of the soldier, where it was carried by a strap. This musket was brought to this country by an officer of the English army during the French war of 1755-6. The militia connected with the regular troops were drafted by the Governor’s orders, from the several towns. Among those from Charlestown was a Mr. Graves, who, during the campaign, formed the acquaintance of one of the non-commissioned officers of regular troops, and from him obtained this piece, which he brought to Charlestown on his return and soon after sold it to his brother-in-law, Nathaniel Chamberlain, then living in Charlestown. Mr. Chamberlain, was a bricklayer by trade, came to Salem in 1773, and died about 1837, over ninety years of age. On his first removal to Salem he lived in the house of my grandfather, Robert Peele, and during that year sold to him this musket, which has been in the family to the present time, ninety-seven years. It had no bayonet when first owned by my grandfather; to meet the requirements of the militia law one was fitted. During the Revolutionary war my grandfather carried it to Lexington under Col. Timothy Pickering; to Rhode Island under Captain Flagg, and on all occasions required by law. My father, (Robert Peele, Jr.) in discharging the duties of a citizen soldier under the laws of the State; and by myself during the war of 1812 and 1813, in the discharge of guard duty on Salem Neck, and other occasions when required. It is in good condition although somewhat antiquated, having a flint lock. At your request, Mr. President, I have named all the facts known to me in the history of the above named musket, and would mention that they were often cited by my father, and that Mr. Chamberlain, who first brought it to Salem, had several times, in my presence, made the same statement.”

Mr. CALEB COOKE stated that Mr. Luther Clapp of Salem, had shot on the 12th of February (1870), a female of the *Lynx rufus* (Bay Lynx) in the woods of Essex. Length of head and body twenty-nine inches; weight seventeen pounds.

BULLETIN

OF THE

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One Dollar a Year in Advance. 10 Cents a Single Copy.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

[Continued from Vol. 1, p. 150.]

APPENDIX.

THE only place in Salem which is associated, by name, with the Old Planters of 1626, is the large open field on the right of the northerly end of Bridge street, which was for many years known as the "Planters Marsh." This has naturally led some to suppose that the first settlement of Salem, in 1626, was in that vicinity. We fail, however, to find anything in published accounts, or in the records, to support such a belief, except in the following statements by Rev. Dr. Bentley, and by Hon. Robert Rantoul, Sen.

Bentley, in his Description of Salem (Mass. Hist. Coll. Vol. 6, p. 233), says:—"Salem, considered as within its present bounds, was first settled upon North River. Shallop Cove (now Collins Cove), open to Beverly harbour, was then much employed." Again, p. 231, "When Francis Higginson arrived, in 1629, there were only six houses, besides that of Gov. Endicott, and these

were not on the land now called Salem." He also says (p. 228), "The first fort was on Beverly side, and erected by Conant's men, before Endicott arrived. It was called Darbie or Derby fort." This latter statement, that Darby fort was on Beverly side, and was built by Conant before Endicott's arrival, explains why he thought the first houses were not where Salem is now; and proves that in this part of his history he must have relied upon false tradition or incorrect information, for there is abundant evidence which shows conclusively that Darby fort* was on Marblehead side; and the depositions of Richard Brackenbury and Humphrey Woodbury, in 1681, made for the purpose of proving an early possession of the land on Beverly side, in opposition to Mason's claim, show us that when the Old Planters removed from Cape Ann (Gloucester), they came "to the neck of land since called Salem," and built their first houses there; and that they took possession of the land on Cape Ann side (Beverly), sometime after the arrival of Endicott. (See Thornton's Cape Ann, Appendix).

In the Account of Beverly by Mr. Rantoul (Mass. Hist. Coll. 3 Ser. Vol. 7, p. 254), he states that "Roger Conant, John Balch, John Woodbury and Peter Palfrey, first settled, in 1626, on the neck of land between Collins Cove on the south, and the North River on the north, in Salem." "Their first houses were near to the margin of the river, and their lots running from the river, across the neck to Collins cove." No authority is given for this statement, and it is most likely that it rests upon some tradition derived from the name "Planters Marsh." We have carefully traced the history of the house-lots on the neck of land above described, and

*Thomas Oliver, in 1658, conveyed to John Bradstreet ten acres "on Marblehead Neck, butting upon Forrest River, and having in the south end an old Indian Fort."

though we can show who owned and occupied them back to a very early date, we find no evidence that any of them were ever owned by the Old Planters.

Let us now see whether any of the descriptions by the early writers will throw any light upon this question.

In "New England's Plantation," written by Rev. Francis Higginson, and printed at London in 1630 (see Force's Tracts, Vol. 1), the writer describes the soil as being sandy "all about our Plantation at Salem, for so our Towne is now named, Psal. 76, 2." "When we came first to Neihum-kek, we found about halfe a score houses and a faire house newly built for the Governour. We found also abundance of corn planted by them very good and well likeing."

In Wm. Wood's "New England Prospect," p. 50, we find, "Four miles north-east from Saugus lies Salem, which stands on the middle of a neck of land very pleasantly, having a South River on the one side, and a North River on the other side; upon this neck where most of the houses stand, is very bad and sandy ground, yet for seven years together it hath brought forth exceeding good corn, it being fished but every three years; in some places is very good ground, and good timber, and divers springs hard by the sea side."

Wm. Wood left New England, Aug. 15th, 1633, therefore corn had been planted on the sandy *neck of land* in 1626. His description would seem to apply to the central portion of the present city.

In "Planter's Plea," London, 1630 (Force's Tracts, Vol. 2), we find it stated that the first planters removed from Cape Ann (Gloucester) "to Nahum-keike, about foure or five leagues distant to the south-west from Cape Anne."

In the "History of New England" (Mass. Hist. Coll. 2

Ser. Vol. 5, p. 102), written by Wm. Hubbard, who was well acquainted with Roger Conant, he says, "After they had made another short trial there (Cape Ann), of about a year's continuance, they removed a third time a little lower towards the bottom of the bay, being invited by the accommodations which they either saw, or hoped to find on the other side of the creek near by, called Naumkeag, which afforded a considerable quantity of planting land near adjoining thereto. Here they took up their station upon a pleasant and fruitful neck of land, invironed with an arm of the sea on each side, in either of which vessels and ships of good burthen might safely anchor. In this place (soon after by a minister that came with a company of honest planters) called Salem, from that in Psal. lxxvi, 2, was laid the first foundation on which the next Colonies were built." He also says that Roger Conant had previously examined this place, "secretly conceiving in his mind, that in following times (as since is fallen out) it might prove a receptacle for such as upon the account of religion would be willing to begin a foreign plantation in this part of the world, of which he gave some intimation to his friends in England."

As Collins Cove is almost dry at low tide, it would be impossible for "ships of good burthen to safely anchor" there. Indeed it seems to us quite evident that the *neck of land* which these early writers refer to, must mean that upon which the main part of the town now stands, between the North River and the South River.

We propose now to show who were the occupants of the land near what is now Bridge street, at the earliest date to which we have been able to trace its history.

Where the Gas Works are now, was called Neal's Point; the Cove south of it was called Waller's Cove, and that to the north of it Massey's Cove.

On the north-west side of Bridge street, and south-west of Skerry street, was the homestead of Francis Skerry, and adjoining it on the north-east, was the homestead of Jeffry Massey, both of whom were for many years prominent in town affairs. Between that and Robbins Lane, which was where the school house is now, was a two-acre lot on which lived Richard Brackenbury, before he removed to Beverly, which was before the year 1640.

On the land north-east of Robbins Lane, lived at about the year 1640, James Smith, Michael Sallows, Thomas Read, John Tucker, Thomas Robins and George Ropes; and near them also Francis Nurse, Wm. Bennett, [Wm.] Waller, Thomas Edwards, and George Wathen. At the point just east of the Salem end of Beverly Bridge was the Ferry landing place, and there lived John Stone, who, in 1636, was appointed to keep the ferry from that point across to Cape Ann side, as Beverly was then called, John Massey, who kept the Ferry after 1686, lived on the same site.

On the south-east side of Bridge street, and extending from where Pickman street is, nearly to Barton street, was the Ship Tavern Pasture, so-called, which was owned by John Gedney, who kept the Ship Tavern where the Mansion House lately stood. It consisted of twelve acres, six of which he bought of George Emory, before 1649, and two of Richard Graves, in 1650, and the other four of Margaret Rix, in 1655. This land was conveyed by the heirs of John Gedney to Deliverance Parkman, in 1698, and by the widow of his grandson, George Curwen, to Benjamin Pickman, in 1749. Deliverance Parkman, in 1714, was allowed four rights "for Josiah Rootes, Edward Giles, [Philemon] Dickenson and John Borne's cottage rights in the Great Pasture, formerly Mr. Gedney's."

Where Barton street is now was a lot of four acres conveyed by Robert Goodell to Francis Skerry, in 1653. Francis Skerry left it to Henry Lunt, who conveyed it to John Higginson, jr., in 1695. John Gardner conveyed it to Lydia Barton, in 1811. By the depositions of Nathaniel Felton and John Massey, recorded in our Registry, B. 11, L. 254, it appears that this was originally two two-acre lots, on which lived Robert Goodell and Peter Woolfe.

Next north-east of this, and including where Osgood's wharf is, was a lot of three and a half acres, which was owned by Jeffry Massey, in 1653, and on which Capt. Thomas Lothrop had previously lived, as appears by the depositions of Samuel Ebourne, Nathaniel Felton and John Massey (See Registry, B. 21, L. 251). John Massey conveyed it to Philip Cromwell, in 1680. The heirs of John Cromwell sold it to Benjamin Gerrish, in 1700, and his heirs to Samuel Carlton, in 1736.

Next north-east was a lot of about four acres, which extended nearly to where Osgood street is now. This was owned by Gervais Garford, and is one of the few lots in Salem which we can trace back to the original grant. The town granted to him and his daughter, Mrs. Ann Turland, Dec. 7, 1635, each "a two-acre lot upon the north side of [Burley's] Cove," "both abutting upon Michael Sallowes and James Smyth's lots, provided they both build upon them and soe be ready to sell his house in the towne." This language would seem to indicate that the locality was at that time considered as being "out of town." The lots of Sallowes and Smith were, as already stated, on the other side of the ferry lane, and north-east of Robbins lane. Garford sold his lot, with three acres of marsh adjoining, to Henry Bartholomew, in 1650, and he assigned it to John Browne, in

1653, who gave it to his sons, John Browne and James Browne, in 1675. In 1654 the town also granted to John Browne "all that land enclosed as well medow as upland which was latelie in the possession of Mr. Garford," and it remained in his family for many years, and was conveyed to Samuel Carlton, in 1734. Gervais Garford was living on this land in 1640.

Next north-east was another lot of three acres, owned and occupied very early by [Joseph] Young, and which was afterwards owned by John Robinson, who conveyed it, in 1694, to Bartholomew Browne, whose administrator conveyed it, together with a part of the Garford lot, to James Lindall, in 1720, and Timothy Lindall conveyed it to Benjamin Pickman in 1758.

Next was a three-acre lot owned in 1658 by Daniel Rumball, and conveyed by his son-in-law, Wm. Curtice, to Samuel Browne, in 1710, it being described in the deed as "the Potter's field," and bounded south by "Potter's lane leading down to Planters Marsh." This lane can still be traced, running along near the south side of where the old Ropewalk was. It was leased by the town to Francis Skerry, in 1680, and was sold in 1740, to Wm. Browne. The name of this field has given rise to the impression that it was originally used as a burial place; and from this, probably, has originated the tradition that the Lady Arbella Johnson was buried there, the remains of a monument even, it is thought, having been found near there.* But this shows how little reliance can be placed upon mere tradition, unsupported by other evidence; for it seems quite clear, from the facts which we shall now state, that this name, "the Potter's field," was derived from the occupation of the person who first lived there.

[*To be continued.*]

* See Felt, Vol. 2, p. 446, also 1st edition, p. 522.

REGULAR MEETING, MONDAY, MARCH 7, 1870.

The President in the chair. Records of preceding meeting read.

The Secretary reported the following correspondence.

J. F. A. Andrews, Pittsfield, Mass., Jan. 27, Feb. 5, 7; Bowdoin College, Brunswick, Me., Feb. 5, 24; British Archæological Association, London, Nov. 20, 1869; Buffalo Hist. Soc., Buffalo, Feb. 7, 23; Mrs. E. F. Condit, Newark, N. J., Feb. 16; B. A. Gould, Cambridge, Mass., Feb. 15, 18; A. C. Hamlin, Bangor, Me., Feb. 6, 11; P. A. Hanaford, Reading, Mass., Feb. 15; E. V. Jameson, Salisbury, Mass., Feb. 15; Iowa State Hist. Soc., Iowa City, Feb. 15; D. W. King, Boston, Feb. 12; Konigliche Gesellschaft der Wissenschaften, Leipzig, Aug. 13, 1869; Konigliche Sachsische Gesellschaft der Wissenschaften, Leipzig, Aug. 13, 1869; Maryland Acad. Science, Baltimore, Dec. 16, 1869; Moravian Hist. Soc., Nazareth, Pa., Feb. 12; Naturg. Gesellsch. of Bazel, Sept. 11, 1869; Natur. Verein du Bremen, Aug. 29, 1869; New England Hist. and Gen. Soc., Boston, Feb. 7, 22; Oberhessische Gesellschaft, Giessen, Sept. 2, 1869; Public Library of Boston, Feb. 8; Soc. Royale des Sciences, Christiania, Dec. 15, 1869; Soc. Royale du Zoologie, Amsterdam, May 31, 1869; W. Hudson Stephens, Copenhagen, N. Y., Feb. 13; J. H. Stickney, Baltimore, Feb. 7, 10; Universite Royale de Norvege, Christiania, Nov. 29, 1869; Universite Lugduno-Batavæ, July 22, 1869; Yale College, New Haven, Feb. 7. American Entomologist, St. Louis, Feb. 24; W. V. Andrews, New York, Dec. 20 and 17; Jacob Batchelder, Lynn, Feb. 25; Chicago Hist. Society, Chicago, March 3; City Library, Lowell, Jan. 21; Department of Interior, Washington, Feb. 22; Chas. Hamilton, New York, Feb. 24; Hist. Phil. Society of Ohio, Cincinnati, Feb. 24; Ferd. I. Hsley, Newark, Feb. 22; New York Hist. Society, N. Y., Feb. 23; New York State Library, Albany, Jan. 20; Mass. Institute of Technology, Boston, Feb. 22; A. E. Verrill, New Haven, Conn., Feb. 24; William Wood, E. Windsor Hill, Conn., Feb. 22.

The Superintendent reported the following Donations to the Museums of the Institute and the Academy.

Lient. ASA T. ABBOTT, U. S. A. Two species of Fish from Tortugas.

M. A. ALLEN, Key West. Coral from Tortugas.

Rev. C. J. S. BETHUNE, Credit, Canada. Sixteen Indian Relics from vicinity of Credit; four specimens of Fossils from the same place.

ELAM BURNHAM, Hamilton. Gos-hawk from Hamilton.

EDW. E. CHEVER, Chicago. Two Stone Arrowheads from Twin Lake, Colorado; Fossil Wood, from Colorado.

THOMAS CLEMENS, Key West, Fla. Coral from Tortugas.

JOHN L. COCHRANE, Peabody. Hawk from Peabody.

Miss CAROLINE FOLLANSBEE. Minerals of the Hot Springs of California; Paper made from the Red Wood of California; two Japanese Coins.

THOMAS GERAGHTY, Key West, Fla. Collection of Coral from Tortugas.

JOHN GOULD, Ipswich. Two Stone Arrowheads and a very small Stone Sinker found at Ipswich.

Col. CHAS. HAMILTON, U. S. A. Crustaceans, from Tortugas, Fla.

ROBERT HOWELL, Nichols, N. Y. A collection of Indian Relics from the vicinity of that place.

CHARLES LAWRENCE, Danvers. Stone Arrowheads from that place.

A. S. PACKARD, Jr., Salem. A collection of Reptiles, Fishes, Mollusks, Articulates, Radiates, etc., from Key West and Tortugas, Fla.

Lieut. ALBERT S. PIKE, U. S. A. Crustacea from Tortugas.

W. T. PHILLIPS, Marblehead. A fine specimen of *Solemya borealis*, and other Mollusks and Crustaceans, from Marblehead.

JOHN B. ROWELL, Tortugas. Shell of Green Turtle, Shells and Hermit-Crabs, from Tortugas.

THEODORE SAMPSON. A collection of Plants collected in the vicinity of Hong Kong, in 1868-9.

SMITHSONIAN INSTITUTION. A collection of European and British Shells, containing three hundred and forty-four species.

Dr. S. A. STORROW, U. S. A. Several specimens of *Gorgonia* from Tortugas.

W. STROBEL, Baltimore. Two specimens *Nerite pleoronta* from Key West, Fla.

CHARLES VEACH. Alcoholic Mollusca from Chariton, Miss.

Miss M. G. WHEATLAND, Salem. Specimen of Radiates from the Isles of Shoals.

The Librarian reported the following additions to the Library.

By Donation.

BETHUNE, CHARLES J. Canada Directory for 1857-58, 1 vol. 8vo. Toronto Central Directory for 1856, 1 vol. 8vo.

BUTLER, BENJ. F., M. C. Monthly Report of the Department of Agriculture for January, 1870, 8vo pamph. Speech of Hon. Z. Chandler, in U. S. Senate, on "Pope's Campaign," 8vo pamph.

DREER, FERDINAND J., of Philadelphia. Centennial Celebration by the Annin Family, at the Old Stone House in Somerset Co., N. J., 1 vol. 8vo, Philadelphia.

GOODELL, ABNER C., Jr. Bangor, Lawrence, Manchester, Fall River, and Taunton Directories for 1869, 5 vols. 8vo.

HAMMOND, CHARLES, of Monson. Jubilee Discourse at the Celebration of the Semi-Centennial Anniversary of the Linophilian Society in Monson Academy, by C. C. Carpenter, 8vo pamph., 1869.

LINCOLN, SOLOMON, Jr. Early Settlers of Hingham, New England, 4to pamph., Boston, 1865.

LORING & ATKINSON. Cotton Culture and the South Considered with Reference to Emigration, 12mo pamph., Boston, 1869.

NOBLE, EDWARD H. Views selected from the Malta Penny Magazine, Vol. I, 4to pamph, 1845.

PAINE, NATHANIEL, of Worcester. Worcester Directory for 1869, 1 vol. 8vo.

PERLEY, JONATHAN. Essex County Directory for 1866, 1869-70, 2 vols. 8vo.

PRENDHOMME, M. ALF., de Borre. Description d'une Nouvelle espèce Americaine du Genre Caiman, Alligator, 8vo pamph. Description d'une espee Americaine de la Famille des Elodites, 8vo pamph.

SALEM WATER WORKS. Account of the Proceedings upon the Transfer of the Salem Water Works to the City Authorities, 1 vol. 8vo, Salem, 1869.

STONE EDWIN M., of Providence, R. I. Twenty-eighth Annual Report of the Ministry at Large, 8vo pamph., Providence, 1870.

SUMNER, CHARLES, U. S. Sen. Report of the Commissioners of Agriculture for 1868, 1 vol. 8vo. Message and Documents, 1868-69, 1 vol. 8vo. Speech of Hon. C. Sumner in U. S. Senate, on "Financial Reconstruction and Specie Payments," 8vo pamph.

UPHAM, J. BAXTER, of Boston. Dedication of a Soldiers' Monument at Claremont, N. H., Oct. 19, 1869, 8vo pamph.

WATERS, J. LINTON, of Chicago. Report of the Superintendent of Public Instruction of Illinois, 1865-1868, 2 vols. 8vo. Treasurer's Report, Illinois, 1867, 1 vol. 8vo. Miscellaneous pamphlets, 10. History of the Chicago River Tunnel, 8vo pamph. Twelfth Annual Report of the Trade and Commerce of Chicago, for 1869, 8vo pamph.

WILLIAMS, WILLIAM O., Dartmouth College. The Ægis, 1867, 8vo pamph.

By Exchange.

AMERICAN ENTOMOLOGICAL SOCIETY. Transactions, Vol. 2, No. 4, 8vo pamph., Philadelphia.

BERGENSKE MUSEUM. Astrand om Bredde og Laengda, 4to pamph., 1864. Beretning om den Internationale Fiskeriudstilling, 1865, 1 vol. 4to. Catalog. over de til den internationale Fiskeriudstilling, 12mo pamph. Baars Les Peches de la Norvège, 8vo pamph., Paris, 1867. Koren med Danielssen's Pectinibranchiernes Udviklingshistorie, med Supplement, 8vo pamphs., 1851. Danielssen's Syphilisationen, 8vo pamph. Danielssen's Zoologisk Reise, 8vo pamph.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings for Feb., 1869, Vol. xiii, sig. 13, 8vo pamph.

BUFFALO HISTORICAL SOCIETY. Buffalo Directory for 1867, 1868, 2 vols. 8vo.

BIDRAGEN TOT DE DIERKUNDE. Uitgegeven door het Genootschap Natura Artis Magistra. te Amsterdam, 1869, 4to pamph.

DORCHESTER ANTIQUARIAN AND HISTORICAL SOCIETY. Taxable Valuation of the Town of Dorchester, 1869, 1 vol. 8vo. Sermon by Rev. James H. Means at Dorchester, 8vo pamph., Boston, 1870.

KONGELIGE NORSKE UNIVERSITET. Det Kongelige Norske Videnskabers-Selskabs Skrifter, 1865, 1868, 2 pamphlets 8vo, Throndhjem. Norsk Meteorologisk Aarbog, 1867-1868, Christiania. Le Glacier de Bovum en Juillet, 1868, 4to pamph. En Anatomisk Beskrivelse af de paa Over-og Underextremiteterne forekommende Bursæ Mucosæ, 4to pamph., 1869. Index Scholarum, 1869, 4to pamph. La Norvège Littéraire, 1868, 8vo pamph. Beretning om Lungegaardshospitalets, Virksomhed, 1865-1867, 8vo pamph. Frederiks Universitets, 1868, 8vo pamph. Forhandlingeri Videnskabs-Selskabet, 8vo pamph. Thomas Saga Erkibyskups, 8vo pamph., 1869. Danielssen om Spedalskhedens Therapie.

MASSACHUSETTS HORTICULTURAL SOCIETY. Transactions for the year 1869, 8vo pamph.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. Fifth Annual Catalogue of the Officers and Students, 1869-70, 8vo pamph.

MICHIGAN STATE AGRICULTURAL COLLEGE. Address before the Board of Agriculture, Faculty and Students, by G. Willard, at Lansing, August 25, 1869, 8vo pamph.

PEABODY INSTITUTE, Baltimore, Md. Report of Adj. General of Maryland, 1869, 8vo pamph. Address of the President of Peabody Institute to the Board of Trustees, Feb. 12, 1870, 8vo pamph.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. Proceedings for August to December, 1869, 8vo pamph.

NATURWISSENSCHAFTLICHE GESELLSCHAFT. Sitzungs-Bericht der naturwissenschaftlichen Gesellschaft Isis in Dresden, 8vo pamph., 1869.

NEW BEDFORD PUBLIC LIBRARY. Eighteenth Annual Report of the Trustees, 8vo pamph.

SOCIÉTÉ DES SCIENCES NATURELLE de Neuchâtel. Bulletin. Tome viii, 8vo pamph.

PUBLISHERS. American Literary Gazette. American Journal of Numismatics. Book Buyer. Bowdoin Scientific Review. Christian World. Cosmos. Eclectic.

Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Lynn Reporter. Mason's Monthly Coin and Stamp Collector's Magazine. Medical and Surgical Reporter. Nation. Naturalist's Note Book. Nature. Pavilion. Peabody Press. Quaritch's Catalogue. Sailors' Magazine and Seamen's Friend.

The PRESIDENT called attention to a portrait of William Orne of Salem (a reversionary gift from the late President of the Institute, D. A. White). This portrait was given by Judge White, some years since, to Mrs. Theresa Norris, wife of Charles Norris of Exeter, and daughter of Dr. Joseph and Theresa (Emery) Orne of Salem, on condition that it should ultimately come into the possession of the Institute. This lady died at Exeter, N. H., January 1, 1870, at the age of eighty-seven years; and the portrait has accordingly been sent to the place of destination, and is a valuable contribution to the collection of historical portraits.

William Orne was a successful and distinguished merchant of Salem during the close of the last and the beginning of the present century, and was eminent for his integrity and attention to business. His numerous virtues, his liberal hospitality, his thousand acts of charity, his ardent attachment to his family and friends, secured to him the affection and veneration of his family and the esteem and respect of his fellow citizens.

His contemporaries were William Gray, E. Hasket Derby, George Crowninshield, Joseph Peabody, and others, who were the merchant princes of that day, when Salem commerce was in the ascendancy.

He was born Feb. 4, 1751, and died Oct. 14, 1815. His wife was Abigail, daughter of Nathaniel Ropes; she died May 20, 1813. Their children were William Putnam, died unmarried. George died in infancy. Eliza married, 1st, William Wetmore, Esq.; 2d, Hon. D. A. White; and had a son, Rev. W. O. White, who is a settled clergyman in Keene, N. H. Samuel lived in Springfield, died leaving issue. Charles Henry died in 1814, without issue. Joseph died Sept. 1, 1818; married Sarah F. Ropes, who is now living in the old homestead on Essex street.

The name of Orne has been a familiar one in our annals from the earliest settlement. In the records of the First Church the first baptism recorded was Recompense, dau. of John Horn, bapt. 25, 10, 1636 (name variously spelt). This John Orne died at an advanced age, in 1684. He probably came to Salem in 1630, in the fleet with Winthrop, but may have been here earlier; a freeman 18 May, 1651; "was deacon," and Bentley says, "in 1680 required the assistance of a colleague, as he had been in that office above fifty years." His second son, Symonds, was the ancestor of the Marblehead family, of whom was Hon. Col. Azor Orne, who was a leading and prominent citizen

and died June 6, 1796. Jonathan H. Orne of Marblehead, who has taken an active part in the temperance movement, is also of this family.

His third son, Joseph Orne, married Anna Tomson, and had Joseph, who died without issue. Timothy married Lois Pickering; Anna the wife of John Cabot. Josiah married Sarah Ingersoll; and Mary, wife of Joseph Grafton.

Timothy was the father of Timothy, who died July 14, 1767, a distinguished and successful merchant.

Josiah Orne was the father of Jonathan Orne, who died January 2, 1774, aged 51, and grandfather of Dr. Joseph Orne, who deceased in 1786 (a good physician and a man distinguished for his attainments in literature and science), and of William Orne, the subject of the present notice.

Remarks were then made by the Secretary, Mr. JOHN ROBINSON, upon some manuscript books that had been given to the Institute by Mr. William A. Lander, and jottings were read from them. They were a diary, principally of maritime events that occurred in and about Salem during the war of 1812-15, and consequently contain a large amount of valuable, as well as entertaining, details of our history during that time.

Dr. PACKARD gave an account of a recent trip to Key West and the Tortugas, Florida, describing in general terms the marine fauna, comparing it with that of New England and the Arctic Ocean. He alluded to the poisonous nature of corals, especially of the madrepores, stating that his hands after handling them for a few hours became very sore, much swollen, with considerable local fever; this state of things lasting for several days. The application of glycerine was made with good results. The living coral should be gathered with the hands protected by gloves or mittens, or anointed with glycerine or grease. The poisoning was caused by the poisonous microscopic darts contained within the lasso cells of the coral polyps. The "Pepper Coral," or *Millepora*, was still more distressing in its poisonous qualities and should never be handled unless the hands are thoroughly protected.

He also described the effects on marine life of an intensely cold period on Dec. 24, 25, 1856, when the thermometer went as low as 44°, very unusual for the latitude of Key West. As described to him by several gentlemen at Key West, multitudes of fish were killed and cast ashore. On Dec. 25, 1868, there was another frost, ice was found and quantities of fish was strewn along the beaches. He compared such a wide spread desolation among the marine animals of the

Florida reefs, during such a period of intense cold for a tropical climate (where the mean of winter temperature is 60°), to the death of fishes and other marine animals by local earthquakes and volcanic eruptions, and thought a much greater devastation was wrought by the former cause.

He was accompanied by Prof. H. H. Goodell of the State Agricultural College, and with his aid had made very large collections, especially of crustaceans, worms, and corals. While at Ft. Jefferson they had enjoyed the hospitality of Colonel Charles Hamilton, during the war in command of the Florida coast, who had done much for the success of the trip; to Colonel Gibson, U. S. A., Commandant of the Fort, and to many of the officers and men they were much indebted for various specimens and the use of boats and aid in dredging, &c. While at Key West they were under constant obligations to M. A. Allen, Esq., for aid in furtherance of their explorations; so that a large and valuable collection was made in departments in which the Museum of the Peabody Academy had been hitherto sadly deficient.

Dr. Packard's remarks elicited several interesting queries, after which, Mr. C. H. HIGBEE being called upon by the Chair, alluded briefly to the subject of horticulture, and suggested the propriety of taking into consideration the expediency of having the rooms opened at stated intervals for the exhibition of fruits, flowers, and vegetables, as was the practice some years since, during the coming season, and the necessity of making early arrangements for the same, if deemed advisable. Many new varieties, especially of flowers, have been recently introduced into our gardens, and with a corresponding effort displays can be made that would compare favorably if not surpassing those of former years. The horticultural department, the past few years, has been in a quiescent condition; he perceived an awakening interest in its behalf and hoped that exhibitions now contemplated would be held at least monthly during the season, commencing with that of the rose and strawberry in the latter part of June. He then exhibited some crocuses, and a coliseum ivy growing in combination self-watering pots, and described the construction of these pots which were invented by Benj. W. Putnam of Jamaica Plains, and are well adapted for growing bulbous and other plants that require much water.



REGULAR MEETING, MONDAY, MARCH 21, 1870.

The President in the chair.

The Secretary reported the following correspondence.

Acad. Wissenschaften, Munchen, Feb. 18; Charles H. Bell, Exeter, N. H., March 8; W. B. Brown, Marblehead, March 18; Boston Public Library, Boston, March 10;

H. J. Cross, Salem, March 19; J. H. Emerton, Albany, March 11; J. J. H. Gregory, Marblehead, March 14; B. H. Hall, Troy, N. Y., March 7; Willinger Hoben, Wau-temburg, Nov. 1, 1869; N. A. Horton, Salem, March 17; Moses How, Haverhill, March 16; John P. Jones, Keetoesville, Mo., March 1; Naturforschende Gesellschaft, Emden, Dec. 24, 1869; William Prescott, Concord, N. H., March 17; Moses W. Putnam, Haverhill, March 17; A. H. Quint, New Bedford, March 15, 19; T. A. Tellkampf, New York, March 14; J. Linton Waters, Chicago, Ill., March 3; Chas. A. Wood, Hudson, N. Y., Feb. 24.

The Librarian reported the following additions to the Library.

By Donation.

BARLOW, JOHN. Report on the Invertebrata of Massachusetts, 1 vol. 8vo, Boston, 1870.

BUTLER, BENJ. F., M. C. Speech of Hon. W. Lawrence in U. S. H. R., March 5, 1870, on "Admission of Georgia," 8vo pamph.

CHASE, GEORGE C. Friends' Review, 33 numbers.

CROSBY, ALPHEUS. Memorial of the Class of 1827, Dartmouth College, by J. F. Worcester, 8vo pamph., Hanover, 1869. Memorial of College Life, by A. Crosby, 8vo pamph., Hanover, 1869-70.

HANAFORD, J. H., of Reading. Miscellaneous pamphlets, 59.

HANSON, J. H. Life and Correspondence of John Paul Jones, 1 vol. 8vo, New York, 1830.

KIMBALL, JAMES. Proceedings of the Grand Royal Arch Chapter of Massachusetts, 8vo pamph., Boston, 1870. Godey's Lady's Book, 9 numbers. Peterson's Ladies National Magazine, 10 numbers.

LINCOLN, SOLOMON, Hingham. Hill's Meteorological Register, 1 vol. 8vo, Plymouth, 1869.

PALMER, JOHN, of Detroit, Mich. Thirteenth Annual Report of the Board of Control of the State Reform School of Michigan, 8vo pamph., Lansing, 1869.

ROBINSON, JOHN. Journal of the North-China Branch of the Royal Asiatic Society, 1859, 1864, 2 pamphlets, 8vo, Shanghai. Report of the Council of the North-China Branch, for 1864, 8vo pamph.

STEARNS, R. E. C. First, Second, Third and Fourth Annual Reports of the Board of State Harbor Commissioners, 4 pamphlets, 8vo, San Francisco, 1864-69.

UPIAM, CHARLES W. General Report of the Commissioners of Public Works for 1867, 8vo pamph., Ottawa, 1868.

WATERS, J. LINTON, of Chicago. Fifteenth Annual Report of the Board of Education, 1 vol. 8vo, Chicago, 1869. Sixth and Eighth Annual Reports of the Board of Public Works, 8vo pamphlets, 1868-9. Alleghany Observatory Attached to the Chair of Astronomy and Physics of the Western University of Pennsylvania, 8vo pamph.

WEINLAND, D. F. Beschreibung und Abbildung von drei neuen Sauriern, 4to pamph., Frankfurt, a-M., 1862.

By Exchange.

BOSTON PUBLIC LIBRARY. Catalogue of the Books in the Prince Library, 8vo pamph., Boston, 1870.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, vol. xiii, sig. 14, March, 1870, 8vo pamph.

IOWA STATE HIST. SOCIETY. Annals of Iowa for Jan., 1870, 8vo pamph.

L'ACADÉMIE IMPERIALE DES SCIENCES, BELLES-LETTRES ET ARTS DE BORDEAUX. Actes de, 3e Serie. Année, 1868, 3me Trimestre, 8vo pamph., Paris, 1868.

NATIONAL ASSOCIATION OF WOOL MANUFACTURERS. Bulletin of, vol. 1, No. 1, January, 1870, 8vo pamph.

NATURFORSCHENDE GESELLSCHAFT in Emden. Vierundfunzigster Jahresbericht der Naturforschenden Gesellschaft in Emden, 8vo pamph, 1868-9. Das Gesetz der Winde abgeleitet aus dem Auftreten derselben über Nordwest-Europa. Von Dr. M. A. F. Prestel, 4to pamph., Emden, 1869.

NEW YORK LYCEUM OF NATURAL HISTORY. Annals for March, 1870, 8vo pamph.

NOVA SCOTIA INSTITUTE OF NATURAL SCIENCE. Proceedings and Transactions, vol. ii, part 3, 1868-69, 8vo pamph.

WISCONSIN STATE HISTORICAL SOCIETY. Annual Address before Wisconsin State Hist. Society, by Hon. M. M. Strong, 8vo pamph., Madison, 1870.

ZOOLOGISCHE GESELLSCHAFT. Der Zoologische Garten. Zeitschrift Beobachtung, Pflege und Zucht der Thiere, Jahrg, x. Nos. 7-12. 8vo pamph., Frankfurt, a.-M., 1869.

PUBLISHERS. American Journal of Numismatics. American Journal of Science and Arts. American Literary Gazette. Canadian Naturalist. Cosmos. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Journal de Conchyliologie. Lawrence American. L'Investigateur. Lynn Reporter. Medical and Surgical Reporter. Monthly Record. Nation. Nature. Peabody Press. Sotheran's Catalogue.

The Superintendent reported the following Donations to the Museums of the Institute and Academy.

SAMUEL CARLEN, Salem. Great Horned Owl shot in Salem.

WESLEY CLARK, Panama. Scyllarius (a crustacean), from fifteen fathoms; Bay of Panama.

HENRY EDWARDS, San Francisco. Large collection of Insects from California.

N. L. NEWCOMB, Salem. Parasites from *Larus marinus*.

M. C. MILLER, U. S. A. Insects from Fort Reynolds, Colorado Terr.

GEORGE A. PERKINS, Salem. Parasites from Human Subjects.

S. H. SCUDDER, Boston. Insects from Florida.

Major WILLIAM STONE, U. S. A. Insects from Aiken, S. C.

Mr. W. P. UPHAM gave a very interesting account of the original laying out of Salem, pointing out on a map, which he had constructed for the occasion, the places where several of the old Planters built their houses. It appears probable that the early pioneers settled in different parts of the town. The Planter's Marsh was pointed out on Bridge street, and also the Potter's Field in the same vicinity. Mr. Upham also showed very satisfactorily that the house now owned and occupied by G. P. Farrington, on the corner of North and Essex streets, was owned and occupied by Roger Williams. It was afterwards sold to Jonathan Corwin, and until a few years since has been kept in that family. Such being the case, another interesting reminiscence is connected with this old historic mansion. [See page 33.]

Remarks were made by Messrs. JAMES KIMBALL, GEORGE D. PHIPPEN, A. C. GOODELL, Jr., and others, alluding to these investigations and their value in elucidating our early history.

Hon. N. E. ATWOOD of Provincetown, a member of the State Senate, was present, and by invitation from the Chair presented some remarks on the habits of several of our marketable fishes, with especial reference to their respective abundance or scarcity in our markets.

He stated that in reference to the petitions sent to the Legislature remonstrating against the over-fishing in our bays, he did not agree with the facts set forth by them, and that in his opinion the different species of fishes decrease and increase without regard to the methods practised for their capture, citing as instances the haddock which had steadily increased, and the halibut which had decreased. In the case of the haddock he considered it probable that the troll took not only the haddock but a great number of fish which fed upon their spawn, thereby giving the haddock greater chances to increase. He also spoke of the change in the habits of some of our fishes and the methods of capturing them. In regard to the mackerel, the former method used in catching them was by dragging hooks on lines twenty fathoms long and constantly raising and lowering them; now they are caught at the surface with bait, large quantities of which are strewn alongside to attract them. Formerly all the cod on the Banks of Newfoundland were caught on board of the vessels while lying at anchor, each man using two lines; when the fish were abundant all the men would fish, but usually not more than half of the crew; at times, when no fish could be taken, all the lines but one would be drawn in, and they would begin to be taken abundantly; but let two or more begin to drop their lines, and not an individual would be taken; while, should all the lines but one be again taken in the captures would once more be frequent. This suggested the idea of carrying small boats with them so that each man could fish apart from the others, and in this they met with perfect success.

Votes of thanks were passed to Messrs. Upham and Atwood for their interesting communications.

Charles H. Miller of Salem, was elected a resident member.

Mr. F. W. PUTNAM read a communication in relation to Capt. C. F. Hall's third expedition to the Arctic Regions, expressing the opinion that the proposed voyage and sledge journeys, if undertaken upon a proper and extended basis, would prove of vast importance in obtaining the solution of several scientific problems and establishing beyond doubt many important points relating to the geography of these regions;—and concluding with a series of resolutions; which were adopted.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2. SALEM, MASS., APRIL, 1870. No. 4.
One Dollar a Year in Advance. 10 Cents a Single Copy.

FIRST HOUSES IN SALEM.

BY W. P. UPHAM.

APPENDIX.

[*Concluded from page 39.*]

WE learn from the Commoners Records that the original occupants of "the Potter's field," were William Vincent (or Vinson) and the widow Isabel Babson, both of whom removed about the year 1642, to Gloucester. This William Vincent is said by Babson, in his History of Gloucester, to have been "a pot-maker," or potter. We also find, in the "Waste Book" of the County Court Records, that Mr. William Pester of Salem, was presented for certain misdemeanors "at the Potter's house," Jan. 31, 1641. Mr. Pester acknowledged that he was "*at the Potter's house*," and says in defence, "I was invited by Pride and wife; and John Stone and his wife, and was at Stone's house, from whence we were fetched to *ye Potter's*." [John] Pride testifies that Pester "was invited by *Vincen*." "Goody Hardy" also testifies that "*Wm. Vincen* and [Hardy] weare gone out of the house," and that "this was about the second day of November, miscalled

Alhollantyde." Joseph Young also was a witness in this case. Thus the locality where this affair occurred is identified as being the "Potter's field," where Wm. Vincent, the potter, lived, by the names of the persons mentioned as concerned in it. John Stone was the next neighbor, and lived at the ferry. Joseph Young lived on the other side of "the Potter's lane," and "Goody Hardy," was perhaps living with, or near, the next neighbor, Gervais Garford, for she afterwards purchased of him a house and land in Beverly.

The traces of Vincent's potter's oven may have remained there for a long time, and have been mistaken for the ruins of a brick monument. This is all that the records tell us as to the first occupants of house-lots in that vicinity.

We now come to the Planters Marsh itself, which consisted of about twenty-five acres, being low ground, part upland and part marsh, and was bounded by the ferry lane (now Bridge street) on the west, and by the river, or cove, on the east, and extending from "the Potter's field" on the south, nearly to where the bridge is now. Seven acres of this was conveyed by Peter Palfrey to his son-in-law, Samuel Pickman, and by him to Wm. Browne, in 1662. This appears, as nearly as we can judge from the imperfect description in the deeds, to have been on the westerly side of the field. The easterly part of the field, next the water, seems to have been divided into three parts of about six acres each, the northern one owned by John Woodbury, and afterwards by George Emery, and the middle one by John Balch, and afterwards by Walter Price; the southern one was owned by Francis Skerry, and perhaps had been purchased by him of Roger Conant. The whole field came finally into the possession of Wm. Burnett Brown, who, in 1766, con-

veyed it, together with "the Potter's field," to Dudley Woodbridge. No claim was ever made for any cottage right as appurtenant to this field, as there undoubtedly would have been if there had been any house on it before 1661.

In a lawsuit, in 1680, concerning the six acres in Planters Marsh, which had been owned by John Balch, "lying betwixt Francis Skerry on the south side and Mr. George Emery on the north side," Capt. Wm. Dixie, aged seventy years, testifies that "above forty years past of my own knowledge, John Balch, Sen., had in his possession about five or six acres of land in ye marsh called ye planter's marsh, near the north ferry in Salem." Francis Skerry, aged about seventy-four years, testifies that thirty-five years before, it was known to be John Balch's; and Humphrey Woodbury, aged about seventy years, testifies that "about fifty years past, of my knowledge, John Balch, Sen., had an interest in ye marsh called ye ould planter's marsh, near ye north ferry in Salem, with ye other old planters." It is a significant fact that among all the papers in this suit there is nothing to indicate that any of the Old Planters ever lived near there.

It seems that the town claimed certain rights in the Planters Marsh. An order was passed, Nov. 26, 1638, "that the meadow that is in common amongst some of our brethren, Mr. Conant and others, shall be fenced in the first day of April, and left common again the last of September every year." In the Index of the Book of Grants is written by Jeffry Massey "ould planter's marshe for fencing and opening is in the old booke anno 1638." April 15, 1639, there was "granted for the year to Mr. Fisk and Mr. Fogg the hay grass of the salt marsh meadow at the side of the Old Planter's fields." In 1653 the town granted to George Emery "the herbage of that

parcel of land which was John Woodbury's in the old planter's marsh, and all right of commonage the town might have claimed, to him and his heirs forever;" and, in 1658, to Wm. Hathorne "the town's right and privileges in the planter's marsh," and he gave a deed of release to Francis Skerry in 1659, and to Walter Price in 1666. This interest which the town disposed of, may have been acquired when that peaceful settlement of conflicting rights was made between Endicott and Conant, which gave the name of Salem to the town.

We have thus brought together all that we have been able to learn as to the early history of this locality; and we think these facts all tend to show that the Old Planters did not build their first houses there, but, probably before the arrival of Endicott, had made use, in common, of the marsh land there, as a convenient place for readily obtaining salt hay, at that time of great importance to them; the town reserving the right to use it also for that purpose, at certain seasons of the year. At about the time when Roger Conant removed to Beverly, they seem to have divided it among themselves, subject to the rights of the town. We are inclined to think that the land in that vicinity was not appropriated for house-lots till after Beverly and Ipswich were settled; that is, about the year 1634, or 1635.

The manner in which the house-lots in the central part of the town were originally laid out, seems to indicate that the earliest settlement was made in the vicinity of Elm street and Washington street upon the South River. Between these streets the lots were small, irregular, and not in conformity with the plan upon which the rest of the town was laid out. East of there, all along the South River to the Neck, house-lots were laid out running back from the river; and along the North River, west of

North street were larger house-lots, also running back from that river. Essex street was probably a way that came gradually into use along the ends of these lots; and, as they were all of the same depth from the river, this street acquired, and has retained the same curves that the rivers originally had.

Between Elm street and Central street was the ancient burying ground; and on the corner of Elm and Essex streets lived Wm. Allen, one of the old Planters.

We do not think, however, that the Old Planters all lived close together, for we find Wm. Traske locating himself at the head of the North River, Richard Norman at the foot of the rocky hill since called by his name; Thomas Gardner near Dean street, and John Woodbury, Roger Conant and Peter Palfrey on the north side of Essex, and between Washington and St. Peter streets.

If we may indulge in conjecture as to the place of the first landing, all the probabilities seem to point to the cove which then existed at the foot of Elm street. Nothing could have been more inviting to those early colonists, after leaving the bleak and rocky Cape Ann, than this inlet of the sea, protected from the main harbor by Jeggles Island, and beautiful as it must then have appeared surrounded by pine groves and gently sloping shores, plentifully provided with "divers good springs hard by the sea side."

Gov. Winthrop, describing his arrival here in 1630, says, June 12th, we "came to an anchor a little within the islands." June 14th, "in the morning we weighed anchor, and the wind being against us, and the channel so narrow as we could not well turn in, we warped in our ship and came to an anchor in the inward harbour." And in a sketch which he made at the time of the shore, while Collins Cove and Winter Island are hardly distinguishable, the South River is fully delineated.

ROGER CONANT'S HOUSE.

It would be a very interesting item of local history if we could know where the house of Roger Conant stood, for, according to his own statement, it was the first house erected in Salem. The town records mention, in 1639, "Mr. Conant's house at Cat Cove." This was probably only a small house used for fishing purposes, to which pursuit, the Neck and Winter Island were devoted during the first century, lots being first granted there in 1636; and many of the more wealthy inhabitants had besides their houses in town a "fishing house" at the Neck or Island.

The only other reference to a house belonging to Roger Conant, in Salem, is a vote of the town Aug. 21, 1637, that "Mr. Conant's house situated next unto Mr. John Fisk, with half acre of ground," should be bought for the benefit of Wm. Plase, a blacksmith, and it seems to have been intended that it should belong to his heirs, or assigns, after his decease. The purchase appears to have been completed, for receipts for the sum of 10£ 16s, 8d., paid to Roger Conant soon after, are entered on the record. Wm. Plase died April 15, 1646, and his estate was settled by Thomas Weeks, who presented to the town a claim for expenses and for care of the deceased during his sickness. It is possible, if not probable, that the house bought of Roger Conant for Wm. Plase came into the possession of Thomas Weeks in accordance with the agreement of the town.

We find that Thomas Weeks owned, before 1655, a house and half an acre of land on the north side of Essex street, opposite where the Market, or Derby square, is now. The site is at present occupied by the dwelling house of Hon. Richard S. Rogers. Here, we believe,

stood the house of Roger Conant, built in 1626; and this belief is confirmed by the evidence that two others of the Old Planters, John Woodbury and Peter Palfrey, lived close by; and also by the probability that the house, which is mentioned as next adjoining, where John Fisk lived, who was then acting as minister of the church, would be in the vicinity of the meeting house.

THE HOUSE OF ROGER WILLIAMS, 1635.

On the western corner of North and Essex streets stands the old house well known as the Witch House. We have already given in a former article (*Historical Collections* Vol. VIII, p. 257) the history of this house so far as it was then known, showing that it was originally owned by Roger Williams, in 1635-6, and afterwards by Captain Richard Davenport, whose administrators sold it to Jonathan Corwin, in 1675, and that it was then thoroughly repaired by him, and was again altered in 1746, a new roof being built and the back part of the house raised to two stories and the porch taken away.

Since that article was written we have obtained, through the kindness of Mr. E. M. Barton, Assistant Librarian of the Antiquarian Society of Worcester, a complete copy of the original contract between Jonathan Corwin and Daniel Andrew, in 1675, as to the repairs to be made upon this house, which we here present.

“Articles and Covenants made, agreed upon, and confirmed between Mr. Jonathan Corwin, of Salem, merchant, and Daniel Andrews of ———, of the other part concerning a parcell of worke as followeth, viz. : Imprimis, the said parcell of worke is to be bestowed in filling, plaistering and finishing a certaine dwelling house bought by the said owner of Capt. Nath’l Davenport of Boston, and is situate in Salem aforesaid, towards the west end of the towne be-

tweene the houses of Rich. Sibley to the west and Deliverance Parkman on the east; and is to be performed according to these following directions, viz.

1. The said Daniel Andrewes is to dig and build a cellar as large as the easterly room of said house will afford (and in the said room according to the breadthe and lengthe of it) not exceeding six foot in height; and to underpin the porch and the remaining part of the house not exceeding three foot in height; also to underpin the kitchen on the north side of the house, not exceeding one foot; the said kitchen being 20 foot long and 18 foot wide; and to make steps with stones into the cellar in two places belonging to the cellar, together with stone steps up into the porch. 2. For the chimneys he is to take down the chimneys which are now standing, and to take and make up of the bricks that are now in the chimneys, and the stones that are in the leanto cellar that now is, and to rebuild the said chimneys with five fire places, viz., two below and two in the chambers and one in the garret; also to build one chimney in the kitchen, with ovens and a furnace, not exceeding five feet above the top of the house. 3. He is to set the jambs of the two chamber chimneys and of the easternmost room below with Dutch tiles, the said owner finding the tiles; also to lay all the hearths belonging to the said house and to point the cellar and underpinning of sd. house and so much of the 3 hearths as are to be laid with Dutch tiles, the said owner is to find them. 4. As for lathing and plaistering he is to lath and siele the 4 rooms of the house betwixt the joists overhead and to plaister the sides of the house with a coat of lime and haire upon the clay; also to fill the gable ends of the house with bricks and to plaister them with clay. 5. To lath and plaister the partitions of the house with clay and lime, and to fill, lath, and plaister with bricks and clay the porch and porch chamber and to plaister them with lime and hair besides; and to siele and lath them overhead with lime; also to fill lath and plaister the kitchen up to the wall plate on every side. 6. The said Daniel Andrews is to find lime, bricks, clay, stone, haire, together with labourers and workmen to help him, and generally all materials for the effecting and carrying out of the aforesaid worke, excepte laths and nailes. 7. The whole work before mentioned is to be done finished and performed att or before the last day of August next following, provided the said Daniel or any that worke with him, be not lett or hindered for want of the carpenter worke. 8. Lastly, in consideration of all the aforesaid worke, so finished and accomplished as is aforesaid, the aforesaid owner is to pay or cause to be paid unto the said workman, the summe of fifty pounds in money current in New England, to be paid at or before the finishing of the said worke. And for the true performance of the premises, we bind ourselves each to other,

our heyres, executors and administrators, firmly by these presents, as witnesse our hands, this nineteenth day of February, Anno Domini 1674-5.

JONATHAN CORWIN.
DANIEL ANDREWE."

Thus it appears that this house was so old in 1675 that the chimneys had to be taken down and new ones built. Previous to that time it seems not to have had any plastering or ceilings, the "sides of the house" only being filled with brick and covered or "daubed" with clay.

A picture of this house, as it was before the second alteration was made in 1746, is in the possession of the Institute. It shows the underpinning "not exceeding three feet in height," and the porch with the stone steps up into it. The side gables were perhaps an addition at some intermediate period.

By the favor of Dr. G. P. Farrington, who now owns the house, and Mr. W. T. Servey who occupies the upper part of it, we have been enabled to obtain the following minutes of the present appearance of the interior. The western side of the house still retains, behind the plastering, the bricks with which it was originally filled, covered over with clay. The original rooms measure nearly as follows: eastern room below $21\frac{1}{2}$ by 18 feet; room over it $21\frac{1}{2}$ by 20 feet; western room below $16\frac{1}{2}$ by 18 feet; room over it $16\frac{1}{2}$ by 20 feet. The chimney is about 12 by 8 feet. In each of the eastern rooms three, and in the western rooms two, stout hewn timbers of solid oak cross the ceiling. The line of the old roof is now plainly visible on the eastern face of the chimney in the garret, and shows that the pitch of the roof was very steep. The only part of the outside of the house which retains its original appearance is the western part of the front towards Essex street with its projecting upper story.

The evidence that this was the house of Roger Williams will be seen in the article referred to at the beginning of this notice; but since that was written we have found two additional items of proof. In a deed of land on the east side of North street, in 1671, from the heirs of Samuel Sharpe to John Turner, North street is described as "formerly called Williamses Lane." After Jonathan Corwin bought the house, the same street was called "Corwin's Lane," or as the name was afterwards spelt, "Curwen's Lane." Again it appears upon the County Court Records that, in 1650, the Grand Jury presented as being defective the "way between Roger Morey and Mr. Williams his house that was." Roger Morey, lived on the western corner of Essex and Dean streets.

It may be well here to briefly recapitulate the history of this house. In a letter written from Providence in 1670, by Roger Williams to Major Mason (Mass. Hist. Coll., Vol. 1, p. 276), he says "when I was unkindly and unchristianly, as I believe, driven from my house and land and wife and children (in the midst of a New England winter, now about 35 years past) at Salem, that ever honoured Governour Mr. Winthrop privately wrote to me to steer my course to the Nahigonset Bay and Indians for many high and heavenly and publike ends, encouraging me from the freenes of the place from any English claims or patents. I took his prudent motion as an hint and voice from God, and waving all other thoughts and motions, I steered my course* from Salem (though in winter snow which I feel yet) unto these parts, wherein I may say *Peniel*, that is I have seene the face of God."

He also wrote in a letter to Gov. Winthrop, in 1638,

*The compass which he used to "steer his course" through the pathless wilderness, is still preserved at Providence.

that he had "made over his house" at Salem, to Thomas Mayhew, and afterwards John Jolliffe, as security for a debt to Matthew Craddock. The proof that this house we have described was the one he referred to, is as follows. First, the town records, in 1640, mention a house in this same locality as the house of Mr. Williams. The title (Mr.) shows this must have meant Roger Williams. Secondly, that part of Essex street is mentioned in the Court records, in 1650, as "the way between Roger Morey and Mr. Williams his house that was." Thirdly, North street was described, in 1671, as "formerly called Williamses Lane." Fourthly, the deeds of land next west in 1662 and 1665, show that this was then owned by Capt. Richard Davenport; and it was conveyed, in 1675, by the administrators of his estate to Jonathan Corwin, being described in the deed as "formerly belonging to Capt. Richard Davenport;" and by the same deed was also conveyed a ten-acre-lot in the Northfield, and this ten-acre-lot is described in a deed of adjoining land, in 1650, as "Mr. Williams' lot." This, by the way, shows conclusively that the statement that this house was built by Capt. George Corwin, in 1642, and given by him to his son, Jonathan Corwin, must be a mistake. We have not been able to find in the records any evidence that Capt. George Corwin ever lived there or had any interest in that estate.

Finally, in 1714, when every one who owned a house which was built before 1660, was allowed by a law of the Colony what was called a "Cottage right," and also a "right for 1702," by virtue of a town vote that year allowing a right for every house then standing, each of these rights was allowed to "Jonathan Corwin, Esq., for his house and Mr. Williams Cottage right."

The following is the law of the Colony passed May 30,

1660. "It is ordered, that hereafter no cottage or dwelling place shall be admitted to the privilege of commonage for wood, timber, and herbage, or any other the privileges that lie in common in any town or peculiar, but such as already are in being or hereafter shall be erected by the consent of the town."

These facts bring us to a conclusion that hardly admits of a doubt, that this house, which has so long been an object of attraction for visitors from all parts of the world, on account of its connection with the Witchcraft tragedy of 1692, and as the residence of one of the judges, must now acquire an added interest as having been once the home of Roger Williams.

Here then, within these very walls, lived, two hundred and thirty-five years ago, that remarkable and truly heroic man, who in his devotion to the principle of free conscience, and liberty of religious belief untrammelled by civil power, penetrated in midwinter the depths of an unknown wilderness, to seek a new home: a home which he could only find among savages, whose respect for the benevolence and truthfulness of his character made them then and ever afterwards his constant friends. From this spacious and pleasant mansion he fled through the deep snows of a New England forest, leaving his wife and young children to the care of Providence, whose silent "voice," speaking through the conscience, was his only support and guide. The State which he founded may ever look back with a just pride upon the history of Roger Williams.

REGULAR MEETING, MONDAY, APRIL 4, 1870.

The President in the chair.

In the absence of the Secretary, Mr. Charles H. Higbee was requested to act. Records of preceding meeting were read.

The following correspondence was announced.

J. F. A. Adams, Pittsfield, Mass., March 1; Hon. B. F. Butler, Washington, D. C., March 25; Henry J. Cross, Salem, March 19; Det Kongelige Danske, Copenhagen, Dec. 31; E. Deyrolle fils, Paris, Jan. 27; Wm. Gossip, Institute Nat. Science, Halifax, March 26; E. E. Chever, Chicago, March 12; B. A. Gould, Cambridge, Feb. 18, March 21, 24 and 29; J. C. Holmes, Detroit, March 23; Public Library, Boston, March 24; J. F. LeBaron, Boston, March 24; Mary Mann, Cambridge, March 4, 21 and 26; Charles H. Miller, Salem, March 26; Moravian Hist. Society, Nazareth, Pa., March 21; H. Roundy, Beverly, March 31; Henry F. Shepard, Boston, March 24; Smithsonian Institute, Washington, March 18; C. M. Tracy, Lynn, March 31; Wm. H. Woods, Rockport, March 25; T. Spencer, Lincoln, Eng., March 9.

The Librarian Reported the following additions.

By Donation.

BAKER, NATHANIEL B. Reports of N. B. Baker, Adjutant and Inspector General and A. Q. M. G. of the State of Iowa, to Hon. S. Merrill, 8vo pamph., Des Moines, 1870.

BUTLER, BENJ. F., M. C. Speeches of Hon. B. F. Butler in U. S. House of Representatives, March, 1870, on "Admission of Georgia," 8vo pamph.

LEE, JOHN C. Commercial Bulletin for March, 1870.

LEWIS, WINSLOW. America, Past, Present, and Retrospective; a Lecture by E. R. Humphreys, 1 vol. 12mo, Newport, 1869.

STONE, B. W. Catalogue of the University of Virginia, 1869-70, 8vo pamph.

TREASURY DEPARTMENT, Washington, D. C. Report of the Secretary of the Treasury on the State of the Finances for 1869, 1 vol. 8vo, Washington, 1869.

WATERS, E. STANLEY, of Chicago. Diocese of Illinois. Journal of the Thirty-Second Annual Convention, 1869, 8vo pamph.

WATERS, J. LINTON, of Chicago. Report to the Directors of the Illinois Central Railroad Company for 1869, 4to pamph.

By Exchange.

PUBLISHERS. American Journal of Numismatics. American Literary Gazette. Book Buyer. Christian World. Cosmos. Eclectic. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Pavilion. Peabody Press. Sotheran's Catalogue.

The Superintendent reported the following donations to the Museums of the Institute and the Academy.

JOSHUA P. HASKELL, Marblehead. Twenty-three unfinished Arrowheads in all stages, from Marblehead.

CHARLES HOWARD, Salem. A piece of "What-cheer" Rock, from Providence.

ROBERT HOWELL, Nichols, Tioga Co., N. Y. A box of Indian Relics, from Tioga Co., N. Y.

G. M. MILLER, U. S. A. Reptiles, from Fort Reynolds, Colorado Terr.
 E. S. MORSE, Salem. Arrowhead, from Swampscott Beach.
 R. L. NEWCOMB, Salem. Specimens of Cedar and Canary Birds.
 — PHILLIPS, Marblehead. Mollusks and Crustaceans from Marblehead.
 B. A. WEST, Salem. Skull of a four-horned Ram, from Africa.

The CHAIR presented for consideration the following act recently passed by the Legislature, to amend the Charter of the Institute, which, after some explanatory discussion, was unanimously adopted on motion of A. C. Goodell, Jr.

COMMONWEALTH OF MASSACHUSETTS.

In the Year One Thousand Eight Hundred and Seventy.

AN ACT

TO AMEND THE CHARTER OF THE ESSEX INSTITUTE.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The Essex Institute shall have for its objects the advancement of the arts, literature and science, in addition to the objects for which the Essex Historical Society and the Essex County Natural History Society were incorporated.

SECTION 2. The third section of chapter five of the acts of the year eighteen hundred and forty-eight, is hereby repealed.

SECTION 3. This act shall take effect upon its acceptance by said Essex Institute, at a meeting duly held for that purpose.

HOUSE OF REPRESENTATIVES, February 11, 1870.

Passed to be enacted.

HARVEY JEWELL, *Speaker*.

IN SENATE, February 12, 1870.

Passed to be enacted.

H. H. COOLIDGE, *President*.

February 12, 1870.

Approved:

WILLIAM CLAFLIN.

SECRETARY'S DEPARTMENT, Boston, March 20, 1870.

A true copy.

Attest:

OLIVER WARNER,

Secretary of the Commonwealth.

A committee consisting of W. P. Upham, W. Neilson, C. H. Higbee, F. W. Putnam and Caleb Cooke, was appointed to report at the annual meeting such amendments to the by-laws as may be required to conform to the amendatory act of incorporation, now accepted; also to report a list of officers to be presented as candidates for election at the same meeting.

Lincoln F. Brigham of Salem, was elected a resident member.

REGULAR MEETING, THURSDAY, APRIL 21, 1870.

Adjourned from Monday evening, April 18.

President in the chair.

Records of preceding meeting read.

The following correspondence was announced :

N. E. Atwood, Boston, April 20; Howard Challen, Philadelphia, Penn., April 11; A. C. Hamlin, Bangor, Me., Dec. 21; S. Henshaw, Boston, April 18; George J. Loughton, New York, Dec. 20; F. H. Lee, Boston, April 9, 14; Lyceum of Natural History, New York, April 11; Sarah A. Lynde, Stoneham, April 18; Maine Historical Society, Brunswick, Me.; E. Mayard, Cape Town, Dec. 9; Moravian Historical Society, Nazareth, Penn., April 11; New England Historic-Genealogical Society, Boston, April 6; Pennsylvania Historical Society, Philadelphia, Penn., April 8; Public Library, Boston, April 9; Charles Reed, Montpelier, Vt., April 16; Rhode Island Historical Society, Providence, R. I., April 7; A. A. Scott, Saugus Centre, April 19; Henry F. Shepard, Boston, April 18; George D. Smith, Boston, March 15.

The LIBRARIAN, in reporting the following additions, spoke of the generous exchanges that had been received from George H. Moore, Esq., Librarian of the New York Historical Society, which had enabled him to nearly complete the Laws and Resolves of Massachusetts from 1775 to the present time, the series of laws being now complete with the exception of eight leaves, and these, he trusted, would soon be received. He also alluded to other valuable exchanges and donations to the Library.

By Donation.

BARNARD, J. M. The New Guide to the City of York, 1 vol. 8vo. Black's Picturesque Tourist of Scotland, 1 vol. 12mo, Edinburgh, 1841. Statistical Almanac, 1843, 1 vol. 18mo. Handbook for Switzerland, 1 vol. 16mo, 1811. Versailles et son Musée Historique, 1 vol. 16mo. Miscellaneous pamphlets, 8.

BENNETT, JAMES. Annual Report of the School Committee of Leominster, 1869-70, 1 vol. 8vo.

BUTLER, BENJ. F., M. C. Monthly Report of the Department of Agriculture for February, 1870. Speeches of Hon. J. S. Witcher and Hon. B. C. Cook, in U. S. H. R., March, 1870, on "The Tariff." Speech of Hon. W. Lawrence, in U. S. H. R., April, 1870, on "National Debt, Taxation, Currency, Labor." Speech of Hon. J. A. Logan, in U. S. H. R., March, 1870, "In Answer to Letter of General W. T. Sherman."

GOODELL, ABNER C., Jr. New Bedford, Cambridge, Portland, Charlestown, Lowell, Providence City and Rhode Island Business Directories, 7 vols. 8vo.

GREEN, SAMUEL A., of Boston. Barnaby Rudge, 15 numbers. Taxable Valuation of Dorchester, 1869, 1 vol. 8vo. Lacroix Elementary Treatise on Arithmetic, 1 vol. 8vo, London, 1823. Miscellaneous pamphlets, 121.

HOLMES, JOHN C. Twenty-fifth Anniversary of the Organization of the First Congregational Church of Detroit, Mich., 8vo pamph., 1870.

HOYT, ALBERT H. Report on Cheap Railway Transportation between Boston and Lake Ontario, 8vo pamph., 1870.

HUGUET-LATOURE, L. A. Report of the State of the Militia of the Dominion of Canada for 1868, 8vo pamph., Ottawa, 1869.

JAMES, THOMAS P. *Journal of a Botanical Excursion in Pennsylvania and New York, 1807*, 12mo pamph., Philadelphia, 1869.

LEAVITT, JOSEPH H. *Journal and Documents of the Valuation Committee, 1860*, 1 vol. 8vo, Boston. *Morse's American Gazetteer*, 1 vol. 8vo, Charlestown, 1804. *Henry of Gnise*, 2 vols. 8vo, New York, 1839. *Olmstead's School Philosophy*, 1 vol. 12mo, New Haven, 1844. *Julia*, 1 vol. 12mo, London, 1790. *English and Swedish Dictionary*, 1 vol. 16mo, Leipsic. A large collection of school books.

MCKENZIE, S. S. *Report of the Receipts and Expenditures of Topsfield, 1857-1870*, 14 pamphlets, 8vo.

STICKNEY, MATTHEW A. *Genealogy of the Stickney Family*, 1 vol. 8vo, Salem, 1869.

STONE, HENRY O. *Library of Practical Medicine*, 3 vols. 8vo, 1861-8. *The Excision of Joints*, by R. M. Hodges, 8vo pamph., Boston, 1861. *Medical Communications of Massachusetts Medical Society*, 4 pamphlets, 8vo, Boston, 1867-9.

SUMNER, CHARLES, U. S. Sen. *Monthly Report of the Department of Agriculture from Nov., 1869, to Feb., 1870*, 3 pamphlets, 8vo. *Speech of Hon. H. R. Revels, in U. S. Sen., March, 1870, on "Admission of Georgia,"* 8vo pamph.

WALTON, EBEN N. *City Documents of Salem for 1869-70*, 8vo pamph., Salem, 1870.

WATERS, J. LINTON, of Chicago. *Military History of Oscar Malmberg*, 8vo pamph., Washington, 1870. *The Land Owner for April, 1870*, 4to pamph. *Chicago Tribune's Annual Review of the Trade and Commerce of Chicago for 1869*, 8vo pamph.

By Exchange.

BOSTON SOCIETY OF NATURAL HISTORY. *Proceedings*, vol. xiii, sig. 15.

IOWA STATE HISTORICAL SOCIETY. *Seventh Biennial Report of the Board of Curators for 1869*, 8vo pamph., Des Moines, 1870.

LONG ISLAND HISTORICAL SOCIETY. *Sixth Annual Report of the Board of Directors*, 8vo pamph., Brooklyn, 1869.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. *The New England Historical and Genealogical Register for April, 1870*.

NEW JERSEY HISTORICAL SOCIETY. *Proceedings*, vol. ii, No. 1, Second Series, 8vo pamph., 1870.

NEW YORK HISTORICAL SOCIETY. *Annotated Constitution, S. N. Y., 1846*, 1 vol. 4to, Albany, 1867. *Revision Documents, 1867-68*, 1 vol. 8vo, Albany, 1868. *Collections of the New York Historical Society, 1868-69*, 2 vols, 8vo, New York. *Proceedings and Debates*, 5 vols, 8vo, Albany, 1868. *Convention Documents*, 5 vols. 8vo, Albany, 1868. *Journal of the Convention, S. N. Y., 1 vol. 8vo, Albany, 1867. Laws and Resolves, 1775-1787. Pamphlets, 8.*

PENNSYLVANIA HISTORICAL SOCIETY. *Correspondence between William Penn and James Logan*, 1 vol. 8vo, Philadelphia, 1870.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. *Proceedings*, Dec., 1869, 8vo pamph., Philadelphia, 1869.

PUBLISHERS. *American Literary Gazette. Book Buyer. Cosmos. Essex Banner. Fireside Favorite. Gloucester Telegraph. Haverhill Gazette. Journal of the Quekett Microscopical Club. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.*

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2. SALEM, MASS., MAY, 1870. No. 5.
One Dollar a Year in Advance. 10 Cents a Single Copy.

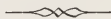
VOCABULARY OF FAMILIAR WORDS USED BY THE INDIANS OF CALIFORNIA.

BY EDWARD E. CHEVER

THE following vocabulary contains some of the familiar words, with their signification, in use among the Indians of California, which Mr. Chever was able to recall after the lapse of several years from the time of his residence among them.

No-to-um, North; Co-win-ne, South; Pue-ne, East; Tāwi-de, West; Tocom, red; Cok-ok-om, white; Cāt-cāt-im, black; Cūt-cūt-im, blue; Pocom, head; Il-lim, hair; Hin-nim, eye; Sumūm, nose; Tcha-wām, mouth; Ma-cher-wim, chin; Mu-sūm, cheek; Bo-nōm, ear; Yim-mim, arm; Piem, foot; Pit-ti-tā-tim, heel; Nan-nam, breast; Kus-kus-se, strong; Ha-nā-nā, handsome; Win-nem, good; Was-sun, bad; Pit-tu, mean; Nim, large; Ne-de-qūn, very large; Tehid-i-ku, small; Te-hid-i-ku-wit-te, very small; Ween, none; Hip-pe-ne, high; Hon-dē, low; Lam-de, far; Lam-de-qūn, very far; Hūm-pū-e-de, outside; Ah-e, five; Su-kūm, smoke; Mū-me, water; Mūm-de, river or pond; Hol-chim, grass; Utim, acorn; Mā-te, bread; Holtim, sturgeon; Mi-em, salmon; Petch-u,

perch ; Läck-läck-em, goose ; Shik-ku, dog ; Tin-cim, cat ; Mia-dim, man ; Killem, woman ; Collem, child ; Hol-pam, village ; Hodis-pam, people ; Yă-wŏm, run ; Yo-wis-se, swim ; Hă-to-to, fight ; Wă-not-te, kill ; Hen-nŏp, yell ; Sed-dem, blood ; Kū-tim, meat ; Dŏm, antelope ; Ich-ăl-im, dry ; Tă-dis-se, rain ; Baă, salt ; Om, stone ; Ich-on hungry ; Isco-nim, old ; Eppin, afraid ; Ho-ne-eă, angry ; Ich-tu, sick ; Wă-no, die ; Tue, sleep ; Cub-bu, alone ; Neh, me ; Min, you ; Hă-e-wă-na, yes ; Dŏh, no ; Yăl-lem, talk ; Wăse, stop ; Ho-măr, be still ; Bă-e-dim, now ; Tŏp-pe, bring ; Meh, give ; Hă-leen, much ; Hă-kŭp-pe, bitter ; Suy-en, sour ; As-să-ke-mă-ă-nă, know ; A-ke, time ; Ish-ke-teen, live ; Upin-ke-teen, come ; Echŏn, go ; Echo-ă-nă-ne, going ; Echo-ă-deăn, gone ; Hă-mŏd-de, where ; Hă-mo-ă-na-ne Echŏn, where are you going ; Hă-ăwk-we-teen, after ; Him-mă, before ; Hed-em, here ; Hod-ŏm, there ; Pŏk-ŏm, sun ; Pok-om puene, sunrise (Akim-hom-Pokomto-do), noon ; Pŏk-om-ti-e-ne, sundown ; Po, night ; Mi-kăwda, friend ; Pă-căl-tim, pay ; Mŭ-e-dŭ, deaf ; Hes-e-ă-nă, what ; Tchi-e-de, other ; Yim-me-ă-nă, full ; We-dem-pow, wonderful ; Epte-ka, frightful ; Moŏn, shoot ; Ta-wal-im, work ; Lă-wă-e-kănă, tired ; Be-nik-men-te, wish ; Hŏn-bono, forget ; Do-se, bite ; Nă-hă-hă, break ; Mip, hold ; Ich-tu-te, pain ; Pik-e-le, hot ; Cow-im, earth ; A-lă-we, country ; Hŭ-kŭm, chief ; Heum, house ; Lo-le, blanket ; Tchām, wood ; Tăk-kăn-im, white man ; Hed-em-a-ke, to-day ; Kă-ă-no, yesterday ; Li-ă-da, to-morrow.



REGULAR MEETING, WEDNESDAY, MAY 4, 1870.

The President in the chair. The records of preceding meeting read.

The SECRETARY announced the following correspondence :

From J. S. Armstrong, Cleveland, Ohio, April 25 ; H. F. Bassett, Waterbury, Conn., April 20 ; Boston Public Library, April 21 ; Boston Society Nat. History,

April 21; E. A. Brigham, Lewiston, Me., April 20; Cambridge Museum Comp. Zoology, April 20; G. L. Chandler, Salem, April 29; E. D. Cope, Philadelphia, April 26; H. B. Dawson, Morrisania, New York, April 11; J. W. Foster, Chicago, Ill., April 27; Dr. S. Green, Easton, Pa., April 21; W. J. Hays, New York, April 19; R. C. Ingraham, New Bedford, April 20; Iowa State Hist. Society, April 23; J. Kidder, Philadelphia, April 20; A. Lackey, Haverhill, April 21; Isaac Lea, Philadelphia, April 22; Marburg, Gesellschaft zu Beförderung, Jan.; Massachusetts Hist. Society, April 20; Geo. Metzger, Circleville, Ohio, April 25; E. Michener, Berlin, Conn., April 21; New York Genealogical and Biographical Society, April 21; New York Hist. Society, April 30; New York Lyceum of Natural History, April 25; Peabody Institute, Baltimore, April 28; C. T. Robinson, New York, April 20; Frank Springer, Burlington, Iowa, April 21; C. Stodder, Boston, April 22; U. S. Dep't Interior, April 29.

The LIBRARIAN announced the following additions :

By Donation.

ATWOOD, E. S. Miscellaneous pamphlets, 38.

BUTLER, BENJ. F., M. C. Bennett's Speech in U. S. H. R., April 1, 1870, on "National Defence of the Lakes." Cox's Speech in U. S. H. R., March 28, 1870, on "The Tariff."

COLE, MRS. NANCY D. Account Books, 2 vols. folio. Adams' Lectures on Natural Philosophy, 4 vols. 8vo, London, 1794. Johnson's Dictionary, 1 vol. 8vo, London, 1792. Also, 22 volumes and 63 pamphlets.

COLE, THOMAS, Estate of. Annals of Scientific Discovery, 3 vols. 8vo. Humboldt's Cosmos, 2 vols. 8vo. Dammii Novum Lexicon Græcum, 2 vols. 8vo. Millers's Foot Prints of Creation, 1 vol. 8vo. Also, seventeen volumes of valuable scientific works.

COOK, GEORGE H. Annual Report of the State Geologist of New Jersey for 1869, 8vo pamph., Trenton, 1870.

CURWEN, GEORGE R. Church Almanacs, 1865-1869, 12mo pamph., New York. Memorial of Rev. H. W. Ducachet, D. D., 8vo pamph., Philadelphia, 1867.

DABNEY, Miss E. P. Scriptural Interpreter, 21 Nos. Monthly Journal of American Unitarian Association, 51 Nos.

HOE, R. & Co. The American Enterprise, folio pamph.

HUNTINGTON, GEORGE C. Annual Report of the Secretary to the Governor of the State of Ohio for 1869, 8vo pamph., Columbus, 1870.

LEE, JOHN C. Commercial Bulletin for April, 1870.

MOORE, W. H. Minutes of the General Association of Connecticut, at the Annual Meetings, June, 1867-9, 8vo pamphlets, Hartford.

ROBINSON, JOHN. Boon, Catalogue of Books and pamphlets, 1 vol. 8vo, New York, 1870. Pamphlets, 3.

SALEM, CITY OF. Salem City Documents, 1869-70, 1 vol. 8vo, Salem, 1870.

STICKNEY, Miss HANNAH. Flavel's Works, 2 vols. folio, London, 1701. Life and Character of J. Edwards, 1 vol. 12mo, Boston, 1765. New England Annals, 1 vol. 16mo, Boston, 1736. Also, 9 volumes and 3 pamphlets.

SUMNER, CHARLES, U. S. Sen. Commercial Relations, 1 vol. 8vo, Washington, 1869. Report of Sup't of U. S. Coast Survey, 1 vol. 4to, Washington, 1869. Acts and Resolutions of the U. S. Congress, 8vo pamph., Washington, 1869. Sherman's Speech in U. S. S., Feb. 28, 1870, on "Funding Bill."

WATERS, H. F. Address on the Life and Character of J. Sherwin, by R. C. Waterston, Feb. 16, 1870, 8vo pamph., Boston, 1870.

WATERS, J. LINTON, of Chicago. Miscellaneous pamphlets, 4.

WILLSON, E. B. Miscellaneous pamphlets, 293.

By Exchange.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, Vol. xviii, sig. 16, April, 1870, 8vo pamph.

BOTANISKE FORENING i Kjöbenhavn. Botanisk Tidsskrift udgivet af Den Botaniske Forening i Kjöbenhavn, 2 pamphs, 8vo, 1869.

BOWDOIN COLLEGE. Catalogue of the Officers and Students, 1869-70. 8vo pamph., Brunswick, 1870.

GESELLSCHAFT ZUR BEFÖRDERUNG DER GESAMMTEN NATURWISSENSCHAFTEN zu Marburg, Schriften der, Heft 3, 4, 5, 4to pamphlets, 1869. Beobachtungen ueber Lernæocera, Perniculus und Lernæa, von Dr. C. Claus, 4to pamph., 1868. Sitzungsberichte, 1866-68, 8vo, Marburg.

INSTITUT NATIONAL Genevois. Memoires, 1866-68, 4to pamphlets, Geneve. Bulletin, Nos. 23-27, 30-34, 8vo pamphlets, 1864-69.

KÖNIGLICH BAIERISCHE AKADEMIE DER WISSENSCHAFTEN zu München. Sitzungsbericht der, 1869. 7 pamphlets, 8vo. Ueber die Entwicklung der Agrikulturchemie, von August Vogel, 4to pamph, 1869. Denkschrift auf Carl Friedr. Phil. von Martius von C. F. Meissner, 4to pamph., 1869.

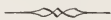
KONGELIGE DANSKE VIDENSKABERNES SELSKAB. Oversight over det Kongelige Danske Videnskabernes Selskabs og dets Medlemmers Arbejder i Aaret, 1868, 1869, 8vo pamph., Kjöbenhavn.

KONGELIGE NORDISKE OLDSKRIFT SELSKAB. Memoires de la Société Royale des Antiquaries du Nord, 1866, 1867, 1868. 8vo, pamphlets, Copenhagen.

PEABODY INSTITUTE, Baltimore. Md. Discourse on the Life and Character of George Peabody, by S. T. Wallis, 8vo pamph., Baltimore, 1870.

YOUNG MEN'S ASSOCIATION of Buffalo, N. Y. Thirty-fourth Annual Report of the Executive Committee, 8vo pamph., Buffalo, 1870.

PUBLISHERS. Cosmos. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Lawrence American. L'Investigateur. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nature. New York Genealogical and Biographical Record. Salem Observer. Sotheran's Catalogue. Trade Circular.



ANNUAL MEETING, WEDNESDAY, MAY 11, 1870.

President in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence :

E. W. Buswell, Boston, May 5, 7; E. E. Chever, Chicago, Ill., March 12; Codman & Shurtleff, Boston, May 6; J. B. Lippincott & Co., Philadelphia, May 7; New England Historic-Genealogical Society, Boston, May 6; Ohio Historical and Philosophical Society, Cincinnati, May 2; George Henry Preble, Charlestown, May 5; Stephen Salisbury, Jr., Worcester, May 5; T. A. Tellkamp, New York, April 21; U. S. Dep't Interior, Washington, April 29.

The LIBRARIAN announced the following additions :

By Donation.

BUTLER, BENJ. F., M. C. Morton, Pool, and Warner's Speeches in U. S. S., April 14, 15, 19, 1870, on "Admission of Georgia," 8vo pamphlets.

HART, CHARLES H. Tribute to the Memory of Hon. W. Wallis, LL. D., 8vo pamph., Philadelphia, 1870.

SUMNER, CHARLES, U. S. S. Presentation of the Statue of Maj. Gen. Greene by the State of Rhode Island, with Remarks in U. S. S., Jan. 20, 1870, 8vo pamph.

UPHAM, WILLIAM P. Railroad Returns, 1867, 1 vol. 8vo, Boston. 1868. Miscellaneous pamphlets, 13.

WATERS, J. LINTON, of Chicago. Seventh Annual Report of the Chicago and Alton Railroad Co. for 1869, 8vo pamph., Chicago, 1870.

WILLSON, E. B. Eighth Census, 1860, 1 vol. 8vo, Washington, 1862. Christian Examiner for March, 1869. Rebellion Record, 1860-64, 8vo pamphlets, New York.

UNITED STATES DEPT OF INTERIOR. Documents 39th Congress, 4 vols; Documents of 40th Congress, 43 vols.

By Exchange.

ENTOMOLOGISCHEN VEREINE zu Stettin. Entomologische Zeitung. Herausgegeben von dem, 8vo pamph.; 1869.

PUBLISHERS. American Literary Gazette. Canadian Journal. Cosmos. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Salem Observer.

The reports of the Recording Secretary, Treasurer, Librarian, and Superintendent of Museum were severally read and accepted.

The RECORDING SECRETARY reports that his short incumbancy of the office would entitle him only to little credit for progress, and also would be an excuse for any inaccurate statements, having had no personal knowledge and relying mainly upon the records.

Since the last annual meeting thirty persons had been elected to membership, and twelve of our associates have been removed by death, viz.: Francis Boardman, died at Salem, January 25, 1870, aged 84. Joshua Safford, died at Salem, May 13, 1869, aged 84. Joseph Barlow Felt, died at Salem, Sept. 5, 1869, aged 79. Joseph Adams, died at Salem, Oct. 5, 1869, aged 75. Stephen Osborne, died at Salem, Dec. 1, 1869, aged 65. Nathaniel James Lord, died at Salem, June 18, 1869, aged 64. Charles Davis, died at Beverly, Jan. 14, 1870, aged 63. John P. Phelps, died at Salem, April 16, 1870, aged 59. John B. Shepard, died at Salem, Dec. 3, 1869, aged 52. Willard L. Bowdoin, died at New Braintree, on a visit to his friends, April 27, 1870, aged 50. Brown E. Shaw, died at Salem, Jan. 17, 1870, aged 33. Robert W. Reeves, died at Salem, Oct. 16, 1869, aged 27, from the effects of a painful accident at Lynn a few months previous. Obituary notices of the above will be prepared for the *Historical Collections*.

By the will of the late Charles Davis of Beverly, this Society is entitled to receive a legacy of \$5000, to constitute a fund, the income arising therefrom to be appropriated for the general objects of the Society.

The Correspondence has been, as usual, large, arising mainly from membership and exchanges.

The Publications consisting of the BULLETIN, HISTORICAL COLLECTIONS, and the closing volume of the PROCEEDINGS, have been issued from time to time during the year. The publication of volume six of the *Proceedings* has been delayed, owing to unavoidable causes, but it is believed that it will be completed during the present year, and that in future the BULLETIN and *Historical Collections*, forming the current publications of the Institute, will be issued with regularity. By a recent vote the BULLETIN, which is issued in monthly parts, is furnished free to all members who have paid the assessments for the current year.

Meetings.—Twenty-three have been held during the year. Five of them were field meetings, held respectively at Wakefield, Wenham Middleton (Paper Mills), Rockport, and Lynn. The remaining eighteen, were, with few exceptions, evening meetings, at which were presented papers of value relating either to history, natural history, or horticulture.

Lectures.—A course of seven lectures has just closed. *First Lecture* by W. T. BRIGHAM, Esq., of Boston, Wednesday, Feb. 9, on "The volcanoes of the Hawaiian Islands." Long residence on these islands and frequent visits to the several craters afforded ample opportunities to glean a vast amount of information. *Second*, Tuesday, Feb. 15, by Dr. A. C. HAMLIN, of Bangor, Me., on "American Gems," illustrated by colored diagrams and an extensive series of the gems set as a necklace, tiara, brooch and ear-drops. Most of the gems prized by the ancients and moderns, are found in North America, and a large number within the limits of the United States—these were described—as emerald, beryl, turquoise, opals, diamonds, sapphires, tourmalines, etc. Precious stones are confined to no latitude but are found from the equator to the snows of Siberia and the glaciers of the Alps, though they are the brightest under the tropical sun. *Third*, by R. S. RANTOUL, of the Institute, Tuesday, March 1, "on the various modes of travelling before the introduction of railroads." He gave an historical sketch of the Eastern Stage Company, and other lines of stages in this vicinity that were established for the accommodation of the public; also brief notices of those most interested in these different companies, and portrayed in graphic language the scenes and incidents of stage life. *Fourth*, Tuesday, March 15, by E. S. MORSE, of the Institute, "how animals grow," was described in a lucid manner and finely illustrated by drawings on the blackboard. *Fifth*, Tuesday, March 29, A. HYATT, of the Institute, gave an account of the different theories with regard to the origin of life and the origin of species; differing in his own views to a greater or less extent from all previous authors, he brought forth facts to show the deficiencies of the received opinions. *Sixth*, Tuesday, April 12, Capt. HENRY

ROUNDY, of Beverly, lectured upon China and the Chinese; his information was obtained from personal observation and long study, having passed more than twenty years among that people. *Seventh*, Tuesday, April 26, a poem by Rev. JONES VERY, of Salem, "Settlement of Salem by the Puritans," was a happy selection, affording full scope for thought and reflection, and abounding in materials which are full of interest. His topics were the varied scenes which the early pioneers witnessed—the leaving of the mother country for opinion sake—the voyage across the Atlantic, the arrival on these shores, the laying out of the settlement, the erection of dwellings, the gradual modification of public affairs to conform to the growth of the people and the wants of the times.

These have usually been preceded by the performance of several pieces of music, vocal and instrumental, by members of the musical department, a practice as interesting as it is novel, and one which has added greatly to the pleasantness of the evening. The thanks of the Institute are due to the several lecturers, and also to those who took part in the musical exercises, for their kindness in contributing so essentially to the promotion of these objects of the Institute.

Historical Department.—The last report of the Superintendent of the Museum mentioned, that no arrangement existed for the coins and medals and paper currency. These have since received attention. The coins have been placed in a suitable cabinet and properly classified, with the exception of the ancient Greek and Roman coins. It is hoped that, during the present year, a gallery case will be constructed to contain the more attractive coins and medals. The paper money has been placed in appropriate volumes, in such a manner that additions may be easily inserted. This collection has been greatly increased within the past year.

Natural History Department.—The specimens in this department being deposited with the trustees of the Peabody Academy of Science, renders a notice here unnecessary. The Superintendent of the Museum will state in his report the condition of the department.

Horticultural Department.—Considerable interest has been recently awakened in horticulture, and several papers have been read on this subject at the evening meetings. A desire has also been expressed to revive the horticultural exhibitions, which in past years attracted so much attention in this vicinity. This, it is earnestly hoped, will meet with success. These exhibitions not only advance the cause of horticulture, but indirectly the general welfare of the Society—a number of persons are induced thereby to become interested, who would not otherwise have their attention turned in this direction.

The *American Association for the Advancement of Science* held in August last its annual meeting in Salem, under the auspices of the

Institute; the City Government of Salem, the Trustees of the Peabody Academy of Science and the Salem Board of Trade coöperating. Through the kindness of the County Commissioners and the proprietors of the Tabernacle Church, ample and convenient accommodations were afforded for the various meetings and committees. The citizens of Salem and vicinity doing everything in their power to render the visitors a pleasant and satisfactory week.

Musical Society.—In October last a society was formed under the name of the Essex Institute Musical Library Association, which by vote of the Institute had certain privileges in the rooms. During the past season it has given a series of very enjoyable social concerts, and has deposited a piano and a collection of musical books. The Institute has fitted the lower hall as a concert and lecture room, making one of the most agreeable places for entertainments of this character in the city.

An amendment to the charter, granted by the Legislature in February, and accepted at a meeting duly called for the purpose, will enable the Institute at any time to add to its other departments that of music, which will allow this new society to be incorporated with the Institute on a suitable basis.

I cannot close this report without mentioning my predecessor, Dr. A. H. Johnson, who resigned the office before the close of the year, with many regrets, on account of a prolonged visit to Europe. His experience rendered him most competent to the performance of its duties, and his great interest in the promotion of the objects of the Institute renders his loss as a secretary most sensible.

The TREASURER presented the following statement of the financial condition for the year ending May, 1870.

GENERAL ACCOUNT.

Debits.

Athenæum; Rent, half Fuel, etc.,	\$442 25
Publications, \$1,731 84; Salaries, \$672,	2,403 84
Repairs and fixtures, \$609 59; Gas, \$30 58,	640 17
Sundries, \$61 98; Insurance, \$30,	91 98
Express and Postage, \$121 70; Deposit in Savings Bank \$25,	146 70
Historical Department,	51 25
Natural History Department,	12 70
Balance Account.	289 90

\$4,078 79

Credits.

Dividends of Webster Bank, \$40; Lectures and Entertainments, \$161 56,	\$201 56
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Peabody Academy of Science balance of account, \$500; Bal-	
ance of Subscription A. A. A. S., \$634 33, . . .	1,134 33
Temporary Loan, \$600; Athenæum for Janitor, \$75, . .	675 00
Donations, \$25; Sundries, \$33 27,	58 27
Sale of Publications, \$508 40; Assessments, \$1,341, . .	1,849 40
Balance,	160 23
	<hr/>
	\$4,078 79

NATURAL HISTORY AND HORTICULTURE.

Debits.

Binding, \$124 25; Pamphlets, \$5,	129 25
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Credits.

Dividends. — Naumkeag Bank,	\$28 00
Michigan Central Railroad,	50 00
From General Account,	51 25
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	\$129 25

HISTORICAL ACCOUNT.

Debits.

Binding, \$125; Sundries, \$4 50,	\$129 50
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Credits.

Dividends, — Lowell Bleachery,	\$80 00
Portland, Saco and Portsmouth Railroad, . .	36 80
From General Account,	12 70
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	\$129 50

The SUPERINTENDENT OF THE MUSEUM reports that the duties of the office have materially lessened since the deposit of the Natural History Collection with, and the transference of all donations in this department to, the Trustees of the Peabody Academy of Science. The Historical and Antiquarian portions of the collections have been usually under the care of the Curators of that department, and the condition of the same will be embodied in the report of the Secretary. It is appropriate that a statement be made at the annual meeting of the condition of the Scientific Collection in the custody of the Academy; what additions of scientific value have been made, and what progress in the promotion of the objects of this department has been accomplished.

As Director of the Peabody Academy, and also as Superintendent of the Museum, I would report most favorably, both in regard to the care which has been given to the collections, the present arrangement, and the great benefit thus conferred upon the public.

The Specimens for the most part arranged with those of the East India Marine Society, and the recent accessions of the Academy, are being very rapidly brought into final order, by being named, catalogued, and placed in suitable and safe cases. One feature that was prominent in our former Museum, the formation of a County Collection; has been continued by the Academy, and there are now quite perfect series of specimens illustrating the natural history of the County in all the departments, properly arranged in the western gallery. Every effort will be made to complete this collection. Thus one of the great objects of the Institute will undoubtedly be accomplished under the present arrangement in a very satisfactory manner.

The present advanced state of the Museum of the Academy is in a great measure due to the principles and labors of the Institute in former years, and we should, one and all, be grateful that our incipient plans are now being so well and satisfactorily matured, though under the care of another institution whose objects are in many respects identical. A large number of donations have been received during the year. These have been announced at the regular meetings.

There has been an average daily attendance of two hundred visitors to the Museum during the year, the largest number admitted on any two days, was 1158 on Monday, July 5, and 1337 on Thursday (Fast day), April 7th.

The Museum is open to the public on Tuesdays, Wednesdays, Thursdays, Fridays and Saturdays, from 10 A. M. to 5 P. M., when a constable, provided by the city, is in attendance.

The LIBRARIAN submitted the following report:—

The additions to the Library during the year now closed have been as follows:—

DONATIONS.

Folios,	30	Pamphlets and Serials, . .	2,951
Quartos,	35	Almanacs,	60
Octavos,	370		
Duodecimos,	89	Total,	3,011
Sextdecimos,	23	Total bound volumes, . .	552
Octodecimos,	5		
		Total of Donations, . .	3,563
Total,	552		

EXCHANGES.

Quartos,	10	Pamphlets and Serials, . .	1,061
Octavos,	82	Total of bound volumes, . .	93
Duodecimo,	1		
		Total of Exchanges, . .	1,154
Total,	93	Total of Donations, . .	3,563
		Total,	4,717

Of the total number of Pamphlets and Serials 2,406 were Pamphlets and 1,606 Serials.

The Donations to the Library for the year have been received from two hundred and three different individuals and twenty-four different societies and public bodies.

The Exchanges have been received from one hundred and forty-six different societies, of which sixty-seven are foreign societies. Many of these exchanges are of great value and could not be obtained in any other way than in return for our own publications.

Besides the additions to the Library, the Editors of the *American Naturalist* have received in exchange and placed on deposit, in the Reading Room of the Institute during the past year, eleven bound volumes and two hundred and sixty-five serial publications.

By means of exchange, also, our sets of the folio annual edition of Laws of Massachusetts has been rendered complete from the commencement, in 1775, to the octavo edition of 1806, with the exception only of eight pages, which we hope soon to receive, and thus complete our series of Laws of Mass., from 1775 to the present time. These folio editions of the Laws are extremely rare, and only two other complete sets are known to exist anywhere. Large additions have also been made to our series of Massachusetts Resolves and of the Journals of the Massachusetts House of Representatives.

W. P. UPHAM, Curator of Manuscripts, read the following report on the present condition of that section of the department of History.

The character and importance of the various legal papers, charters, commissions, autographs, records of societies, and other manuscripts deposited in the Institute, and the duty devolving upon us of properly preserving them, was fully set forth in a former report (see Annual Meeting, 1865). During the past year some additions have been made to our collection, and I am pleased to be able to state that much has been accomplished towards bringing this section into a condition that will be creditable to the Society, and will give confidence to those who deposit here such perishable records of the past that they will be properly cared for and preserved for future use. Being convinced that, at a moderate expense, our manuscripts could be arranged in order, and made more secure from accident and injury, and at the same time more available for antiquarian and historical research, a few of the friends of the Institute have been called upon, who have generously responded and furnished the means for carrying out this object. I wish here to acknowledge the receipt of the aggregate sum of five hundred and five dollars (\$505.00) subscribed for this purpose by the following gentlemen: John Bertram, George Peabody, Joseph S. Cabot, James Upton, Richard S. Rogers, Henry Gardner,

L. B. Harrington, R. Palmer Waters, Charles A. Ropes, Wm. B. Howes, Benjamin Stone, Benjamin Cox and Francis Cox.

Of this sum of five hundred and five dollars, fifty dollars and fifty cents have been expended for blank books and other material, and one hundred and four dollars and thirty-five cents for labor employed since Dec. 1st, 1869, leaving a balance of three hundred and fifty dollars and fifteen cents, which it is believed will enable us to accomplish during the coming year very much of the work which remains to be done in this section. Very many of the manuscripts have already been arranged, and eight large folio books filled with papers classified and chronologically arranged. The Secretary, Mr. Robinson, has taken special charge of the collection of commissions which he has arranged and classified in blank books with great care and skill.

The committee appointed at the meeting held on Monday evening, April 4, to report at this meeting such amendments to the by-laws as may be required to conform to the amendatory act of incorporation, reported the following proposed amendments:

BY-LAWS, CHAPTER II.—Instead of the section relating to the Curators, substitute the following:

“The CURATORS shall have the special charge of the arrangement, cataloguing and labelling of specimens in their respective departments, and report on the condition and wants of the same at the annual meeting.”

Instead of the section relating to a Lecture Committee, substitute the following:—

“A LECTURE COMMITTEE, who shall arrange for such Lectures, Gatherings, and Meetings, as may be deemed advisable, and are not otherwise provided for.”

CHAPTER III.—Instead of the first three paragraphs substitute the following:

“The following shall be the Departments of the Institute:—1. DEPARTMENT OF HISTORY. 2. DEPARTMENT OF NATURAL HISTORY. 3. DEPARTMENT OF HORTICULTURE. 4. DEPARTMENT OF THE ARTS.”

The above amendments were acted upon separately and unanimously adopted.

The Committee also recommended the following amendment to the Constitution:

Instead of ARTICLE I, substitute the following: “ARTICLE I. The objects of the ESSEX INSTITUTE are the collection and preservation of materials for the Civil and Natural History of the County of Essex, and the advancement of Science, Literature, and the Arts.”

Voted to proceed to the choice of officers.

The following were elected for the year ensuing and until others shall be chosen in their stead.

President.

HENRY WHEATLAND.

Vice Presidents.

Of History — A. C. GOODELL, JR. *Of Natural History* — S. P. FOWLER.
Of Horticulture — WM. SUTTON. *Of the Arts* — GEO. PEABODY.

Recording and Home Secretary.

JOHN ROBINSON.

Foreign Secretary.

A. S. PACKARD, JR.

Treasurer.

HENRY WHEATLAND.

Librarian.

W. P. UPHAM.

Superintendent of the Museum.

F. W. PUTNAM.

Curators of Department of History.

W. P. Upham, H. M. Brooks, M. A. Stickney, John Robinson, R. S. Rantoul.

Curators of Department of Natural History.

H. F. King, G. A. Perkins, C. M. Tracy, E. S. Morse, Alpheus Hyatt, Benjamin Webb, Jr., N. D. C. Hodges.

Curators of Department of Horticulture.

J. S. Cabot, R. S. Rogers, G. B. Loring, John Bertram, S. A. Merrill, Wm. Maloon, G. F. Brown, C. H. Higbee, John F. Allen, Francis Putnam, Wm. Mack, B. A. West, G. D. Glover.

Curators of Department of the Arts.

James A. Gillis, F. H. Lee, D. B. Hagar, George M. Whipple, H. F. G. Waters.

Lecture Committee.

James Kimball, A. C. Goodell, Jr., George Perkins, G. D. Phippen, Wm. Northey, Wm. Neilson.

Finance Committee.

J. C. Lee, R. S. Rogers, James Upton, S. Endicott Peabody, Robert Brookhouse.

Field Meeting Committee.

G. B. Loring, S. P. Fowler, C. M. Tracy, E. N. Walton, A. W. Dodge, James T. Hewes, Caleb Cooke.

Library Committee.

J. G. Waters, Alpheus Crosby, W. C. Endicott, W. S. Messervy.

Publication Committee.

A. C. Goodell, Jr., F. W. Putnam, C. M. Tracy, R. S. Rantoul, H. M. Brooks.

SOCIAL MEETING, TUESDAY, MAY 24, 1870.

THIS meeting was held at the request of several members, to welcome the advent of spring, the hall being tastefully decorated with stands and hanging baskets of flowers, and to revive the interest in the horticultural department which has been for several years in a quiescent condition. In the early days of the Natural History Society, when a small cabinet contained the entire collection, and the library consisted of a few volumes, recourse was had to the exhibitions of fruits and flowers to render the rooms pleasant and attractive, and for twenty years these were our main reliance to secure the notice and the patronage of the public. The exhibitions, at first small and unpretending, soon assumed a proportion that few only exceeded them in magnitude and none in the beauty and size of many of the specimens shown. Not only the finest products of the gardens and greenhouses were arranged upon our tables and stands, but the native flowers usually received special attention, particularly those rare and curious floral gems that are only found in the most secluded and almost inaccessible recesses of the woods and forests. A gradual change is perceptible in the appearance of the exhibitions, at different periods, by the introduction of new and the disappearance of the old and familiar species and varieties; also a similar change among the contributors; the early pioneers are now passing away; another generation is taking their places; may the latter be inspired with an increased zeal and enthusiasm, and having such a prestige and such an accumulation of experiences be enabled to advance still higher the cause of horticultural science.

The PRESIDENT, in his opening remarks, gave a brief account of the exhibitions of fruits and flowers in the early days of the Natural History Society, and their influences in awakening an interest not only in horticulture but in the general objects of the society. The union of the Essex Historical Society in 1848, and the adoption of the present name. The new vigor and zeal imparted to historic research by this latter movement, the introduction of field meetings, the different publications, historical and scientific, and the progress made in the fulfilment of its plans and objects. The inducement of Mr. George Peabody, by the success that had attended our efforts in these directions, to place in the hands of nine trustees the sum of \$140,000 for the promotion of science and useful knowledge in this, his native county, and to empower his trustees to make such arrangements with the Essex Institute as may be necessary or expedient for carrying into effect the provisions of his trust. The incorporation of the trustees in 1868, under the name of "The Trustees

of the Peabody Academy of Science." The two institutions working in a common cause, with organizations entirely different in character. The Academy, a close corporation of nine members holding funds for specific purposes, and employing agents to perform duties not inconsistent with the Instrument of Trust. The Institute a popular institution of some hundreds of members. The one supplementing the other, and the reasons why the two may not continue, as now, to co-operate harmoniously in the performance of duties committed to their care, and thus to build up an institution, or a series of institutions, which will shed a brilliant lustre for a long term of years throughout our land, and be a beacon light to the investigator in history, science, art and literature.

He mentioned the amendatory act recently passed by the Legislature and the organization of a new department, that of "the arts," and expressed the hope that the increasing development of a taste for music and the other fine arts in this community will soon place it in an honorable position. Horticulture he considered the prime mover in this chain of events, and to her aid the literary and scientific institutions in this place are largely indebted for their present position.

Mr. A. C. GOODELL, Jr., remarked upon the pleasant change in New England with regard to the observance of May day, this ancient holiday of motherland. He alluded to the antiquity of the name of May, some attributing it to Maia the mother of Mercury, others asserting that it is of Teutonic origin. The celebration of the day was distasteful to the Puritans, and he gave a very interesting account of Thomas Morton of Clifford's Inn, Gent., and of the famous May day revels at Ma-re Mount, now Mount Wollaston, in Quincy, which were celebrated under his direction in 1626, and of the action of the colonial authorities against him, the dispersion of his followers and the destruction of his plantation, and of the principal known facts of his subsequent career down to the time of his death in York, Me., in 1646; and stated that this first May day jubilee was the last for generations. The times are greatly changed and, it is to be hoped that May morning will evermore be held sacred to the celebration of the sun's return, the bursting of green buds and the birth of the flowers.

Mr. GEORGE D. PHIPPEN narrated some of his early reminiscences of the horticultural exhibitions and of his botanical excursions in this vicinity at that time; also the changes that had occurred; many of the old favorite flowers have retired before the waves of an increasing population, and hereafter they will be strangers to their once familiar grounds. A more extended account of these reminiscences, especially in relation to Dark Lane (so-called in the olden times) and its vicinity, will be given in a future number.

Mr. C. M. TRACY made some pleasant remarks, referring to the different sciences and arts gathered under and protected by the ample wings of the Essex Institute. He said that when in his childish days he pored over the wondrous stories of classic ancient mythology, he did not dream that he should come to a festival in this ancient city, a gathering of the Essex Institute, and find present in very action the gods and heroes of his childhood. A festival in the interest of horticulture, a service in honor of Flora and Pomona, and to grace and adorn it have come down nearly all the deities of Olympus — Juno, Jupiter and Apollo, Clio, fair muse of history, Euterpe and Terpsichore. Laying emblem and pleasantry aside, he remarked that there is an alliance that horticulture claims and freely receives. That in all the works of horticulture, floriculture, and every culture that aims to bring from the earth a beauty and an excellence hitherto unseen, we have the full sympathy and applauding voice of nature. That the rearing of lovely flowers and delicious fruits is not a turning away from the normal standard — an artificializing of things and a forsaking of true beauty and beautiful truth.

He spoke of his love for the wild flowers, and of the many hours he had spent with them, but he also loved the blossoms of the garden, and had full faith in the refining, elevating influence that they exert over those who learn to enjoy them, and he begged to encourage this worthy undertaking in aid of the arts of culture. It is but the awakening, the bringing to view of a loveliness that otherwise were dormant. As ambassador from the outer court of Flora, he brought this message: — Nature and Art are not opponents but counterparts, and between them there is only harmony and the sympathy of loveliness, forever and ever.

The following programme of music, under the direction of Mr. E. C. CHEEVER, was performed by a select choir, assisted by Miss HATTIE M. SAFFORD, and Mr. GEORGE M. SUMNER, pianist, and interspersed with the addresses, added much to the interest and pleasure of the meeting:

1. CHORUS. { a "The first Spring day." *Mendelssohn.*
 b "Early Spring."
2. SONG. "The Woods." *Franz.*
3. SONG. "The coming May." *E. C. Cheever.*
4. PIANO SOLO. "Frühlingslied." *Mendelssohn.*
5. CANZONE. "Amiamo la vita." *Randegger.*
6. DUETT. "What makes the Spring." *Abt.*
7. CHORUS. { a "Spring." *Muller.*
 b "Ye Shepherds tell me." *Mazzinghi.*

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2. SALEM, MASS., JUNE, 1870. No. 6.
One Dollar a Year in Advance. 10 Cents a Single Copy.

ACTS AND RESOLVES OF THE PROVINCE OF THE MASSACHUSETTS BAY.*

THE Essex Institute has lately received from the Commonwealth, as a donation to its library, two copies of the first volume of this most important publication. The early part taken by this society in urging legislative action for the purpose of bringing together for preservation a complete series of the Provincial Laws, very many of which were then only to be found in a single private collection, renders proper from us something more than a mere passing notice.

This edition, which will be in many respects more complete and useful than any which has preceded it, was authorized by the General Court in 1867, and is in charge of Ellis Ames, Esq., and Abner C. Goodell, Jr., Esq., commissioners appointed for the purpose. These gentlemen, as is well known, are eminently qualified for such an undertaking by their intimate and thorough knowledge of the history of legislation in our State, and by

*The Acts and Resolves, Public and Private, of the Province of the Massachusetts Bay: to which are prefixed the Charters of the Province, with historical and explanatory notes, and appendix. Vol. I. Boston: Wright & Potter: 1869.

their experience in publications requiring the utmost accuracy and faithfulness in the rendering of ancient documents. We have reason to congratulate the Institute that one of its Vice Presidents, and always a most active member, was selected upon this commission, and has had so large and honorable a share in carrying on this very important work.

The first volume, now published, contains all the acts and resolves of the Province, from 1692 to 1714, together with the Province Charters of 1691 and 1726, accompanied by very valuable and important notes, throwing much new light upon the history of legislation in Massachusetts. The preface also gives a full account of all previous editions of these statutes, which will be found of great service to those desiring information on this subject.

The information obtained from the Public Record Office at London, as to the disallowance of acts from time to time by the Privy Council, of itself renders this edition invaluable. The opinions of the law officers of the Crown and other leading minds of Great Britain on subjects relating to legislation, commerce and constitutional rights, are worthy of particular notice as they have never previously appeared in print.

Of the general appearance of this volume now published, and the plan of its arrangement, we feel it impossible to speak too highly. The index is all that could be asked, and the various lists of acts, with the dates of their passage and expiration or disallowance, &c., will be found very useful and convenient.

The first proposal for the publication, now so satisfactorily commenced, was by Governor Andrew, who, in his Address to the Legislature, Jan. 5, 1861, earnestly recommended the collection and publication of the Statutes

from the union of the Colonies of Plymouth and Massachusetts Bay in 1691, to the adoption of the Constitution in 1780. Hon. N. H. Whiting, Chairman of the Committee to which this recommendation was referred, made an elaborate report to the Senate, in which the importance and necessity of publishing these statutes was very clearly set forth, many instances being cited from the decisions of the Supreme Court, showing the influence these Provincial laws have upon many important questions.

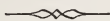
At a meeting of the Essex Institute, Feb. 23, 1863, a resolution was passed approving the recommendation of the Governor above referred to and which had been repeated by him in his Address of the following year, and requesting members to join in any proper measure to carry out the object proposed. A similar resolution was subsequently voted by the New England Historic-Genealogical Society, and by the Massachusetts Historical Society.

In 1865 the Governor again renewed his recommendation, referring to the resolutions above mentioned, and the Committee on the Judiciary, to whom the subject was referred, made a favorable report, in accordance with which a resolve was passed authorizing the preparation for publication of a complete copy of these Statutes, including all the sessions acts, public and private, temporary and perpetual, passed by the Provincial Legislature.

In 1867, as already stated, a further resolve was passed providing for the publication of the material which had been collected under the first resolve of 1865.

An essential foundation for the accomplishment of this work was the very full series of Provincial Statutes which Mr. Ames was over thirty years in collecting, and which is now the property of the Commonwealth.

We notice that the Institute is honorably referred to by the Commissioners, as furnishing material aid from its library. This instance, in which our collection has been rendered useful, should remind us of the importance of completing all our series of public documents.



NOTICES OF NEW BOOKS.

Among the recent additions to the library justice compels us to mention two works, both prepared by officers of the Institute and issued from the Institute Press. The one a valuable contribution to civil history, the other to natural history.

MR. MATTHEW A. STICKNEY has published in a finely printed octavo volume of 526 pages, with illustrations, a very interesting and full *Genealogical Memoir of the Stickney Family*, or a memoir of the descendants of William and Elizabeth Stickney from 1637 to 1869, with an appendix which contains brief notices of a few of the allied families.

This is a beautiful monument, raised with much care and labor to the memory of the Stickney Family — a family that has enrolled, during successive generations, among its members, many honored names, to all of whom befitting tributes, sedulously prepared, are inserted.

The author, with an ardor which indifference on the part of others could not repress, has devoted much time during the lapse of many years, in carefully examining the various parish, church, town, county and other records, conducting a very extensive correspondence with members of different branches of the family and others scattered far and wide in almost every section of the Union and the adjoining Provinces, and, indeed, omitting

nothing that would impart any information upon this his favorite study.

The materials thus collected together are presented in a lucid and attractive form, with copious indices to facilitate reference and the tracing of the pedigree of any member.

We hail with pleasure every attempt like this to record the names and to perpetuate the memory of the founders of the county. May the time be not far distant when every family will have some printed register of its ancestry to strengthen the love of kindred for each other and for their native land. What more beautiful tribute than that of arranging the genealogy of the paternal and maternal line of ancestry for the gratification of those whose honored names they bear, can one pay to the memory of the departed.

In preparing this work for publication the author received the valuable assistance of his second daughter, who, in consequence of his impaired health, has performed the duties of amanuensis, proof-reader, and preparer of the Index. Mr. Stickney is entitled to the thanks of all students in history and genealogy and especially to the members of this family, for presenting the results of his labors in so attractive and agreeable a form.

Dr. A. S. PACKARD, Jr., has completed his *Guide to the Study of Insects*, which was issued in ten parts at irregular intervals during the past two years, in a beautiful volume of 702 octavo pages with eleven plates and 651 wood-cuts, illustrating in all, 1,238 objects. It is accompanied by a glossary of entomological terms, a calendar of the monthly appearance of insects, and a copious index.

This is the only American Text Book of Entomology,

and is designed to teach the beginner the elements of the science, and to serve as a guide to the more elaborate treatises and memoirs which the advanced student may wish to consult. In order to make it of value to farmers and gardeners, whose needs the writer has kept in view, concise accounts have been given of insects injurious or beneficial to vegetation or those otherwise affecting human interests.

The *Guide* is already in use in several of our principal colleges and agricultural schools as a text book or for reference, and has met with favor from teachers and naturalists. The first edition has been exhausted; the appearance of a second indicates its just appreciation, the large number of entomologists in the country, and the growing sense of the importance of the study of practical entomology by agriculturists.



FIELD MEETING AT BRADFORD, THURSDAY, June 16, 1870.

The first field meeting, the present season, was held in Bradford, a beautiful old town lying on the southern bank of the Merrimac River, and containing numerous fine residences. The attendance was large, many of the towns in the county being represented.

The members were met at the station by S. W. Hopkinson, Esq., chairman of the committee of arrangements, and other citizens of Bradford, and conducted to the vestry of the Congregational church, where a cordial welcome was extended by Dr. WILLIAM COGSWELL; and, after the announcement of the programme of the day, divided into parties to visit different localities of interest, the citizens of Bradford acting as guides and furnishing teams for their accommodation.

Among the places visited were the old and new cemeteries, the former, at the site of the first church built in Bradford, being the burial place of its early ministers and many of the first settlers:—the town clerk's office, where several of the party spent much time in examining the ancient records, and were amply repaid for their trouble, by the interesting items brought out in their researches;

Joel's woods, where the botanists obtained many choice specimens of our native flora (Joel, whose name is thus commemorated, was not a wealthy land owner, but a colored personage, who attended to such essential duties as devolve upon the village sexton); the Neck, Head's Hill, and Cogswell's Hill, where were obtained fine views of the windings of the Merrimac, the stirring and busy city of Haverhill, and the green meadows and picturesque slopes which rise from the river banks; the great maple tree at the old ferry, a tree of wonderful growth, with a trunk of eight feet in diameter; John Day's mill in the Boxford limits, where bone fertilizers are prepared; and Chadwick's pond, a fine sheet of water, half in Bradford and half in Boxford.

Bradford is a town of about two thousand in population. It has one church, the present house being the fourth since the establishment in 1682, in December of which year the Rev. Zachariah Symmes was settled. Many of the people cross the bridge to attend Sabbath worship in Haverhill, and the distance is less than many go in our larger towns and cities. It may not be generally known that the wholesale shoe business, now so successfully pursued at Haverhill, began originally at Bradford. About the year 1792, Messrs. Dodge and Terry went to Georgetown, D. C., where they sold Bradford-made shoes on commission; and this trade was subsequently kept up for thirty or forty years.

At 1 P.M. the various parties reassembled to partake of a bountiful collation arranged under the trees on the common by the spirited and hospitable citizens; after which they repaired to the New Bradford Academy, and assembled in the hall of that institution for the afternoon exercises.

At 2 P.M. the meeting was called to order by the President, who, in his opening remarks, alluded to the pleasure of visiting this old town of Bradford, which in the early settlement, was included within the limits of Rowley, and was known as Merrimack, and Rowley village on the Merrimack, and in 1672 was incorporated as a distinct township under the present name. This academy, in whose hall we now meet, is one of the oldest of this class of institutions, having been organized in 1803, and is one of the few that has survived the vicissitudes of the times. It has recently been enabled, by the liberality of its friends, to erect this beautiful and convenient structure. After noticing some of the incidents in the early history of the Institute, and specifying a few of its objects and aims, the President called for the reading of the records of the last meeting by the Secretary.

The Secretary announced the following correspondence:

From Die Naturforschende Gesellschaft Des Osterlandes, Altenburg, Dec. 26; Armstrong, J. F., Cleveland, O., May 13; Akklimatisations-Verein, Berlin, Feb. 8; Die Gesellschaft Naturforschender Freunde, Berlin, January 24; Boston Public

Library, May 18, 21; Boston Society of Natural History, May 16; Bowdoin College, May 24; Boyd, W. H., Washington, D. C., May 19, 26, June 3; Brewer, W. H., New Haven, May 28; Brooks, H. A., Salem, June 13; Buffalo Hist. Society, May 19; Brendel, F., Peoria, Ill., May 6; Bushée, James, Worcester, April 25; Chandler, C. F., New York, May 19; Chicago Academy of Science, May 24; Cogswell, George, Bradford, June 7; Coburn, J., Boston, May 18; Conant, W. P., Caledonia, Mo., May 5; Eastern Railroad, Boston, June 11; Felt, N. H., Salt Lake City, May; Naturforschenden Gesellschaft, Frankfurt, Feb. 9; Die Naturforschende Gesellschaft, Freiburg, Jan. 10; Gillis, J. A., Salem, May 15; Goldsmith, John H., Salem, May 10; Museum Comp. Zool., Cambridge, May 12, 21; Haines, William A., New York, May 13; Hale, M. H., Savannah, Geo., May 17; Hodges, N. D. C., Salem, May 8; Holmes, J. C., Detroit, May 13, 19; Kendig, A. B., Dubuque, Iowa, April 28; Kingsford, Wm., Lynn, May 8; Lunt, W. P., Boston, June 14; Mann, S. B., Providence, May 23; Massachusetts Hort. Society, May 19; Merri-mac Valley Dental Association, May 16; Minnesota Hist. Society, May 23; Neilson, Wm., Salem, May 24; New England Hist. Genealogical Society, May 18; New York Hist. Society, May 18; New York Liberal Club, May 31; New York Lyceum Natural Hist., May 23; New York Merc. Lib. Association, April 29; Preble, G. H., Charlestown, May 13, 16, 25, 31; Rhode Island Hist. Society, May; Smithsonian Institution, April 21; Stickney, M. A., Salem, May 17; U. S. Dep't of Interior, May 9; Walton, E. N., Salem, May 16; Waters, Henry F., Salem, May 10.

The Librarian after the announcement of the following additions to the library, gave brief notices of the Province Laws of Massachusetts, Memoirs of the Stickney Family, and Packard's Guide to the Study of Insects. [See pages 81-86.]

By Donation.

ALLEN, J. FISKE. Christian Register, 54 numbers. Boston Cultivator, 52 numbers. Miscellaneous pamphlets, 11.

BOSTON, CITY OF. Boston City Documents for 1869, 3 vols. 8vo.

BUTLER, BENJ. F., M. C. Congressional Globe, 1868-9, 4 vols. 4to. Memorial Addresses on W. P. Fessenden, 1 vol. 8vo. Message and Documents, 1868-70. War Department, 4 vols. 8vo.; Interior, 2 vols.; State, 1868-9, 2 vols.; Navy and P. O., 1869-70, 1 vol. Abridgement, 1868-9, 1 vol. 8vo. Constitution, Manual, Rules, and Barclay's Digest, 1868, 1 vol. 8vo. Commercial Relations, 1868, 1 vol. 8vo. Causes of Reduction of American Tonnage, 1870, 1 vol. 8vo. Commerce and Navigation, 1868, 1 vol. 8vo. Smithsonian Report, 1868, 1 vol. 8vo. Finance Report, 1869, 1 vol. 8vo. New York Election Frauds, 1869, 1 vol. 8vo. Mineral Resources of the United States, 1869, 1 vol. 8vo. United States Geological Survey of Colorado and New Mexico, 1 vol. 8vo. Congressional pamphlets, 3.

CHAMBERLAIN, JAMES A. The Douglas Axe Manufacturing Company's Catalogue, 1 vol. 8vo, Boston, 1870. Two pamphlets.

MASSACHUSETTS, STATE OF. Acts and Resolves of the Province of the Massachusetts Bay, 1692-1714, Vol. 1, two copies, 8vo, Boston, 1869.

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The SUPERINTENDENT announced the following additions to the Museums of the Institute and of the Academy.

Dr. C. C. ABBOTT, of Trenton, N. J. Specimens of several species of Fish from N. J.

FRANK BUTLER, of Salem. Young Lump Fish from the Grand Bank.

W. B. BUTTERFIELD, of Indianapolis, Ind. Small collections of plants from Indianapolis.

GEORGE CHASE, of Salem. Wild Oats from Mountain View, Santa Clara county, California.

Mrs. H. M. COLCORD, of Peabody. Triton violaceus from Peabody.

Dr. ELIOT COUES, Fort Macon, N. C. Collection of Fishes, Worms, Crustaceans and Mollusks from Fort Macon; also a young turtle from the same place.

JOHN G. FELT, of Salem. Specimen of the wood of apple tree showing the ravages of Insects.

WILLIAM GARDNER, of Salem. Attacus Luna (Lunar Moth).

GEORGE D. HERSEY, of Westerly, R. I. Specimen of Boleosoma Olmstedii from Pawtucket River.

FRANK HOLLAND, of Salem. Young Woodchuck from Salem.

Mrs. MARY MANN, of Cambridge. Plants from the Herbarium of the late Horace Mann.

R. L. NEWCOMB, of Salem. Quartz, Porphyry and Agate Pebbles from California.

JOHN C. OSGOOD, of Salem. *Attacus Luna* (Lunar Moth).

Dr. A. S. PACKARD, Jr., Salem. Crustaceans, Worms, Shells, Insects, etc., from Fort Macon, N. C.

Dr. GEORGE A. PERKINS, of Salem. A Mandingo Hammock, cloth from the Gold Coast. Trumpet made of Antelope's Horns. Rattle used by Gree-gree men. Charms worn on the neck and wrists. Samples of Material used for making cloth. A pod of *Acacia* sp., from Cape Palmas. Two knives from West Africa.

FRANK SHEPARD, of Salem. *Attacus Luna* (Lunar Moth).

WILLIAM H. SILSBEE, of Salem. Parasites from the Red-winged Blackbird.

RUSHTON SMITH, of Waverley, New York. Stone arrowhead from Banks of Delaware River, Pa., and two from Tioga Co., N. Y.

CHARLES F. TULLOCK, of Salem. *Telia Polyphemus* from Salem.

Mrs. TWIST, of Peabody. *Triton violaceus* from Peabody.

B. A. WEST, of Salem. Skull of a four-horned Goat from the interior of Western Africa.

The President then invited Dr. GEORGE B. LORING (Chairman of the Field Meeting Committee) to the chair, who made a very felicitous speech, in which he alluded to the early history of the place, its beautiful situation, its proverbial prosperity and its high rank intellectually, and narrated incidents in its subsequent career. He remarked upon the flourishing condition of the academy, and paid a deserved tribute to some of the past teachers and distinguished graduates.

Dr. GEORGE COGSWELL, of Bradford, was then called upon and in a brief and congratulatory speech extended a hearty welcome to the Institute and its friends, and expressed the gratification of the citizens of the town, and of the teachers and pupils of the academy, in having one of its meetings held in this place.

Mr. F. W. PUTNAM was called to the stand to report on the various zoological specimens that had been collected by the party which visited the pond. He stated that Chadwick's pond was a sheet of water of considerable extent, and on the side at which it was approached was quite shallow for some distance from the shore, enabling a person to wade out among the pond grass and weeds and observe aquatic life in several phases in a very satisfactory manner. Here were to be seen several species of Unionidæ, Planorbis and Limnæa, some moving slowly over the sand, others feeding on the various minute organisms on the plants. Here also could be seen the bright and lively little pickerel darting suddenly from under a large leaf where he had laid in wait for some unfortunate insect to fall from the grass waving above him, or, desirous of higher game, making a dart for a minnow or young shiner; or slowly moving about with their usual restlessness, were the young shiners and dace, with now and then a banded minnow, a young bream, or a young perch moving

rapidly across the scene, while, ever and anon, a giant among them all, an adult bream would swim slowly through the grass, exhibiting its wavy fins and grace in its changeable course. Here also was the paradise of aquatic insects: water beetles were chasing each other about in their wild dance, now in a circle, one close on the other, then suddenly off to the right and the left, back again to the centre, then "all hands round," and off again: several species of Cadisflies, slowly crawling along in their artful cases of sticks, of straws, or of stones; with now and then a large and handsome leech, stretched to its utmost length, making all haste possible in its undulating course to a more congenial spot; or the little red spider, looking like a ruby in the water, swimming about apparently with some grand object in view.* While all this and much more was going on under the water, how full of life was the air immediately over it. There were to be seen several species of dragonflies darting about after their smaller relatives, while occasionally one of these "dragons" would fall a victim to a higher and more powerful foe to insect life, as a swallow would dart over the water, sometimes even wetting its feathers in its eagerness for a dainty bit. On almost every projecting blade of grass could be seen the dried skins that had protected the dragons and their friends while pursuing their aquatic life, but now left behind by the brightly colored and guazy winged creatures whose short aerial lives were to be spent in sunshine. On many of the blades of grass could be seen the eggs of some aquatic dipterous insect in the form of large, dark purple bunches, the weight of which was sufficient to bend the grass over so that the eggs floated on the water. All this and much more was taking place and could be seen as we stood up to the top of our boots in the water; and, I ask, was it not worth wading for and watching for? In answer to my question I will say, try it once, and you will be sure to do so again, if you find you have anything in your head worth calling eyes.

Several specimens were sent to the table for explanation, among them a large mudturtle (*Chelonura serpentina*) which from his snappish manner few in the party thought worthy of farther acquaintance, but after a few remarks on his peculiar structure by Mr. Putnam, and on suggestion that *Chelonura* soup was not to be despised, he was looked upon with toleration. The habits of the dorbug were also related, and an attempt was made to convince the young ladies of the Academy, who had evinced their special interest in this question, that in its present adult form it was a harmless insect, and would not bite, notwithstanding the peculiar sensation it occasioned in its attempts to maintain a close acquaintance. A large moth collected by one of the

*Mr. Hyatt collected a female spider with her eggs, which he saw deposited.

pupils was stated to be the American silkworm moth, while the large, green swallow tailed moth, collected by another pupil, was identified as the Luna moth, one of our finest species of which several specimens had been secured during the day.

In reply to several questions about the currant worm, Mr. Putnam stated that recently there had been brought to the Museum of the Peabody Academy six different larvæ that were more or less injurious to the currant. One was believed to be an imported species, and was far more destructive than the old currant worm (*Abraxas ribearia*) which is of the measuring worm family, while the imported species is the larvæ of a saw fly. The currant borer he mentioned as being quite injurious by its destruction of the wood, but all were as naught when compared with the new pest. Mr. Putnam also called attention to the singular pruning of the top twigs of the bushes, and stated that while this seemed to be the work of some minute cut worm, he had not yet been able to discover the insect. He thought the pruning was not injurious to the bushes, but was in reality a natural process of "nipping," and so long as the insect kept to its present habits we need not feel alarmed at this addition to our stock of currant bush insects.

Mr. A. HYATT of the Institute opened his remarks by alluding to the fact that he had already spoken before the larger part of his present audience upon the Surface Geology of this section, and therefore would speak to-day of a matter of more general interest, the discovery of the Eozoön in Essex County.

He then gave an account of its structure and the structure of the other Foraminifera now living at great depths, forming by their abundance the floor of the present ocean bottom.

The speaker also remarked how much Dr. T. Sterry Hunt and the Canadian Geological Survey, had done for the elucidation of the Geology of the county, and ended by summing up the results of the discovery of the Eozoön.

By request, Dr. A. S. PACKARD, Jr., has furnished the following account of the Currant Saw Fly:

This saw fly, which is a net-veined insect, with clear wings, and belongs to the same group of insects (Hymenoptera) that the bee, wasp and ichneumon fly do, has proved even more destructive to currant bushes than the well known looper, geometer, or measuring worm, which transforms into a yellowish moth (*Abraxas ribearia*) found flying about gooseberry and currant bushes in July.

Imported into nurseries at Rochester, N. Y., during the year 1860, it spread into Eastern Massachusetts about five years since, I am told by Mr. F. G. Sanborn, and for two seasons past has been very destructive in gardens in Essex County.

The following account of its habits is quoted from the *Guide to the Study of Insects*:—"There are fifty species of *Nematus* in this country, of which the most injurious one, the gooseberry sawfly, has

Fig. 1.



been brought from Europe. This is the *N. ventricosus* of Klug, which was undoubtedly imported into this country about the year 1860, spreading mostly from Rochester, N. Y., where there are extensive nurseries. Prof. Winchell, who has studied this insect in Ann Arbor, Mich., where it has been very destructive, observed the female on the 16th of June, while depositing her cylindrical, whitish and transparent eggs, in regular rows along the under side of the veins of the leaves, at the rate of about one in forty-five seconds. The embryo escapes from the egg in four days. It feeds, moults and burrows into the ground within a period of eight days. It remains thirteen days in the ground, being most of the time in the pupa state, while the fly lives nine days. The first brood of worms appeared May 21st; the second brood June 25th. Winchell describes the larva as being pale-green, with the head, tail and feet black, with numerous black spots regularly arranged around the body, from which arise two or more hairs. Figure 1: 1, shows the eggs deposited along the under side of the midribs of the leaf; 2, the holes bored by the very young larvæ; and 3, those eaten by the larger worms.

Fig. 2.



"In transporting gooseberry and currant bushes, Walsh recommends that the roots be carefully cleansed of dirt, so that the cocoons may not be carried about from one garden to another. The leaves of the bushes should be examined during the last week of May, and as only a few leaves are affected at first, these can be detected by the presence of the eggs and the little round holes in them, and should be plucked off and burnt. The female saw fly is bright honey-yellow, with the head black, but yellow below the insertion of the antennæ. The male differs in its black thorax, and the antennæ are paler reddish than in the female."

The dates given above of the times of appearance of the two broods will apply to this state.

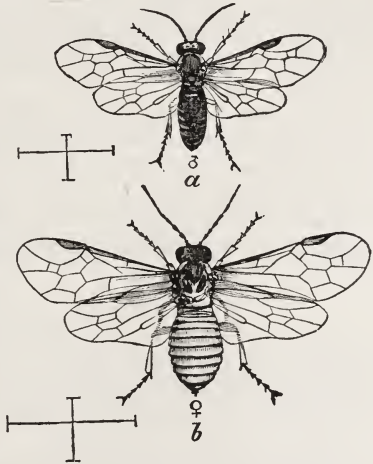
The natural enemies of this pest are three ichneumon flies, one of which is a minute egg-parasite, Mr. Lintner of New York, stating that among fifty eggs only four or five hatched out the currant worm.

One of the best remedies, next to hand-picking, is dusting powered white hellebore over the bushes, by sprinkling it from a muslin bag tied to a stick, as it otherwise excites violent sneezing. Used in this small quantity it is not poisonous. Dr. Mack tells me that he has used a solution of a pound of copperas to six gallons of water with much success. It blackens the leaves, but does not injure them permanently.

By steady and combined effort this terrible pest, together with the currant looper or geometer, *Abraxas ribearia*, can be kept under. Birds and fowl do not apparently feed on this worm, as our feathered friends have their antipathies to certain articles of worm diet, hence we must fight them with fingers and drugs.

Fig. 1, represents a leaf with the eggs (1) of the sawfly laid along the mid ribs, and the holes (2, 3) made by the young larvæ at different stages of growth. Fig. 2 represents the larvæ still further advanced, with an enlarged view of one of the segments (b). The male (a) is figured on the third cut, together with the female (b); the crossed lines representing the actual length of body and spread of wings. Figs. 2 and 3 are taken from the *American Entomologist*, Vol. 2, No. 2, where a full account of this insect may be found.

Fig. 3.



THE PARTY which had devoted the forenoon to an examination of the town records made a report of their investigations. The following items from these records were specified. A Record book of ear marks from 1721 to 1810, quite a curiosity in its way, presenting many ingenious devices for cropping and cutting the ears of cattle, sheep, etc. Thus, — 1723, Ezra Rolfs mark, a crop of neer eare and a slit in the crop and a nick the under side of the eare. Jan. 31, 1723-4 Hew Smith's mark, a half peny the under side of the neer eare. Oct. 15, 1725, Jona. Kimball's mark, a swallow's tale in the neer eare and a half peny under the same eare.

There are also in the same book two publications of intention of marriage, viz : —

"This may certifie whome it may conserne that Isaac Hardy and Esther Barker both of Bradford was published according to Law and have stood en [tered] fifteen days. Dated in Bradford the 5 of Aprill []. Bradford Aprill the 25, 1727. This may sertifie whome it may conserne that John Perker of Bradford, and Elizabeth Middleton of Boxford, ware published and stood posted fiveten days according to Law.

Attest

RICHARD BAILEY, *Town Clerk.*

Town Records, Vol. I, 20, 3, 1668 to March 22, 1742: vol. II, 1742 to 1787; Vol. III, 1787 to 1838.

East Parish (now Groveland) Record 1722 to 1813.

Town Treasurer's Book 1734-1800.

West Parish Records 1738-1852.

Book of Births, Marriages and Deaths 1670-1793.

"1676 Thos. Kimball was shot by an Indian ye 3d of May, 1676 — and his wife and 5 children, viz : Joannah, Thomas, Joseph, Priscilla and John were carried captive." "The wife and children of Thomas Kimball that ware taken by ye Indians when he was slain returned home ye 13th of June, 1676."

Mr. JAMES H. EMERTON, of Salem, spoke of the Insects captured during the excursion.

Hon. HENRY CARTER, of Haverhill, occupied a few moments in offering some congratulatory remarks, expressing his pleasure upon the exercises of the occasion.

E. N. WALTON, of Salem, offered the following resolution which was unanimously adopted.

Resolved, That the grateful thanks of the Essex Institute be tendered to the Local Committee of Arrangements and Reception; the teachers of the Bradford Academy and the Public Schools, and other ladies and gentlemen who have contributed to the interest and pleasure of the present meeting.

[*To be continued.*]

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2.

SALEM, MASS., JULY, 1870.

No. 7.

One Dollar a Year in Advance. 10 Cents a Single Copy.

"DARK LANE," WITH ALLUSIONS TO OTHER LOCALITIES OF WILD PLANTS IN SALEM.

BY GEO. D. PHIPPEN.

"And lest the reader should too often languish with frustrate desire to find some plant he needeth of rare vertue, he spareth not to tell in what wood, pasture, or ditch, the same may be seene and gathered."—GIRARD.

It has been justly noticed that the enthusiasm of the youthful founders of this institution, under its primitive name of the Essex County Natural History Society, found zealous occupation in sustaining its floral exhibitions, held every summer for several years, and at first as often as weekly, at every recurrence of which, one or more stands were devoted exclusively to the exhibition of wild flowers.

The ease with which at that time, some thirty-five years since, a large collection of native plants could be gathered, including many of the rarer sorts, in the short space of an afternoon ramble, and that not necessarily out of the territory of the city, would, we think, somewhat surprise a frequenter of the field meetings of the

present day, when contrasted with the paucity sometimes manifested at collections brought in at some of these meetings, even when conducted by committees of considerable size. Since that time much waste and unoccupied land, then quite wild and neglected and seldom visited by its owners, has been enclosed and built upon; woods have been cleared, new roads made, or old ones straightened and widened, and the ancient rude stone walls, under and around which nestled many a rare plant, have given place to more modern structures of wall, fence, or neatly trimmed hedge.

The custom of laying out extensive suburban residences has rapidly increased, until at the present day the fear of trespassing upon private property keeps the investigations of the botanical student longer in the highway, and forces him to travel a far greater distance than formerly, to find the choicer gifts of flora in her favorite haunts.

This is, perhaps, more than compensated by the ease with which distant points are readily gained, and a much larger circuit surveyed, by availing one's self of the rapid conveyance which the radiating lines of railroad now afford.

We are confident from the botanical experience of many years in the county and other parts of the State, and of New England, that the territory of Salem was formerly remarkable for its numerous and peculiar localities of wild shrubs and plants, which fact has had many an attestation from strangers who have visited us. Many plants now justly esteemed rare could then be readily obtained by an early morning walk before the labors of the day began.

Some of these localities were as follows: The vicinity of "Castle Hill," where flourished fine specimens of the

Shad Bush and Cockspur Thorn, two species of yellow *Gerardia*, purple *Lespedeza*, *Uvularia*, Cow Parsnip and *Alisma Plantago*.

Farther on at "Legg's Hill," with its neighboring coppices, ponds and runs of water, where among various forms of ferns, sedges and equisetum could be found the *Sarracenia* with its peculiar flowers and more remarkable leaves; the Dogtooth Violet, "the yellow bastard Daffodil with spotted leaves" of the pioneer Josselyn, that rare tree the *Laurus benzoin*, *Caltha*, *Lythrum*, *Eupatorium perfoliatum*, *Vicia cracca*, *Calla*, *Acorus*, *Arum*, and our only parasite, *Cuscuta*, with its golden threads and diminutive waxen bells.

"Great Pasture," a wide and varied territory of rocky wastes, shady water courses and meadow lands, where may still be found many of the plants above named, also *Sassafras*, species of *Sumach*, *Pyrus*, *Prunus*, and other trees, *Ericaceous* shrubs in abundance, as species of *Vaccinium*, *Andromeda*, *Azalea* and *Kalmia*; while *Cypripedium*, *Bloodroot*, *Bellworts*, *Medeola* and *Convallaria*, are a few of the many species to be found in its woods. In its low grounds two species of *Lily*, two species of *Lobelia* and *Orchis*, *Arethusa*, *Cymbidium*, *Rhexia*, *Hottonia*, and others.

"Columbine Hill," in the Great Pasture, is the same to-day as when Spencer, long absent but not forgotten, wrote that its direction from town might be traced by the scarlet nectaries of the *Columbine* strewn in the way by the numerous boys returning on "lecture day," with hands well filled with its showy bells.

"Salem Neck" also had its peculiar flora, *Cakile*, *Statice*, *Datura*, *Archangelica*, Marsh Pea and *Solidago sempervirens*, the noblest of all the golden rods; also obscure species of the pink tribe and others, without allud-

ing to marine plants that grow within the wash of the sea. A remarkable specimen of the shrubby and rare form of *Rhus Toxicodendron* or poison ivy, may still be seen at Juniper, among rocks jutting over the sea; its usual form being that of a slender rambling vine.

"North Salem," however, with its numerous fields and old stone walls, stretching toward "Danvers" that was, on the one side, and on the other with points and bays bordering the sea, in its variety of surface and of soil, was richer in wild plants than any other section of the suburbs.

"Cole's Hole and Barr's Pasture," furnished *Uvularia*, *Arum*, and *Geum rivale*, two *Osmundas*, and other ferns.

"Paradise," including Harmony Grove, not then devoted to its present sacred use, abounded in *Columbines*, *Ranunculus* and *Violets*, two species of *Geranium*, *Genista tinctora* of the Puritan dyer's memory, *Silene inflata*, *Dianthus armeria*, our only American pink, and that perhaps a strayling from Europe; also many other plants, and some quite rare. "Orne's Point, Cold Spring and vicinity," before Kernwood was appropriated, had climbing over its old walls, *Clematis*, Bitter-sweet, Thornless *Smilax*, Roxbury waxwork, Native Grapes and other vines, while scattered over its surface could be found *Comandra*, *Ceanothus*, species of *Polygala*, *Sanicula*, Marsh Pea, Wild Onion, *Erigeron Philadelphicum*, species of *Convallaria*, *Gerardia flava*, *Gentiana saponaria*, *Corydalis glauca*, *Veratrum viride* and *Erythronium Americanum*.

But no limited locality of the neighborhood at all compared with that portion of "North Fields" known as "Dark Lane," which extended from the corner of what is now School and Grove streets, to Central street in Peabody, and which several years since was straightened,

and graded into the present wide avenue, known as Tremont street, so that now scarcely a vestige remains of its former shrubby and umbrageous growth; even its once expressive name may soon be lost unless perpetuated by this institution, whose trust it is to guard and preserve our local history, whether territorial, social, or in whatever sense the same may be insignial. So prolific in shrubs and plants were the borders of this way that it is not too much to say that a careful description of the different species there found would make a respectable botanical work, embracing as it did a fair portion of the flora of New England.

When first remembered by the writer there hung around its sombre name a vague regret of traditional derivation, that its deepest shades and choicest recesses, homes of the rarer floral congeners, had in a degree already departed; sire and matron of the olden time told a like story of its shady borders and abundant floral productions. This narrow lane was formerly undoubtedly bordered with trees of native growth, whose interlacing branches once shut out the sun, and suggested the appropriate name it so long bore. At the time of which we write the trees had nearly all disappeared, with the exception of an occasional Locust or Wild Cherry, while in their stead grew a wide and exuberant hedge of overhanging shrubbery, which so crowded upon the narrow cart-way that with vain regrets we often witnessed the cropping of its margin by the neighboring farmers, to save its wasting effect upon loads of hay carted through from contiguous grounds.

This deep hedge of shrubbery, tangling vines and tall herbaceous plants, grew on either side for many a rod of the way, quite up to the single line of cart ruts made in the centre, extending also in many places as far beyond

the stone walls into the adjoining fields, and was composed of different species of Cornels, Viburnums, Spiræas, Sumacs, Prunus, Pyrus, Barberry, Clethra; also Sweet Briar, and other wild roses, and here and there festooned with Clematis, Apios, Celastrus, Smilax, Bitter-sweet, Grape, and other vines; while from the damp and rich soil along the walls, under their shadow and in more vacant spaces among the shrubbery, grew in rich profusion many species of both lowly and lofty herbaceous plants, flowering in successive order, from the Hous-tonias and Violets of early spring, to the Yarrow and other composites that linger to welcome the falling snow.

Some of these shrubs and plants, of which we have many pressed specimens, gathered there more than thirty years since, to which are attached descriptive tags of locality, etc., are given below, together with others that exist most graphically in the memory, both as to specific form and exact spot of growth, as though we could return once more and pluck them again from their ample stems.

OF SHRUBS AND LOW TREES WERE

Cornus circinata.
Cornus stolonifera.
Cornus paniculata.
Corylus Americana.
Viburnum Lentago.
Viburnum dentatum.
Viburnum pyriform.
Cephalanthus occidentalis.
Clethra alnifolia.
Berberis vulgaris.
Rosa Carolina.
Rosa rubiginosa.
Rosa lucida.
Rubus odoratus.
Rubus strigosus.
Rubus villosus.

Rhus glabra.
Rhus vernix.
Myrica cerifera.
Comptonia asplenifolia.
Andromeda paniculata.
Andromeda ligustrina.
Alnus serrulata.
Salix eriocephala.
Robinia pseudacacia.
Prunus Virginiana.
Prunus serotina.
Cratægus Crus-galli.
Spiræa opulifolia.
Spiræa salicifolia.
Spiræa tomentosa.
 Species of *Prunus* and *Pyrus*.

OF VINES.

Clematis Virginiana.
Vitis Labrusca.
Celastrus scandens.
Apios tuberosa.

Solanum dulcamara.
Smilax rotundifolia.
Rhus Toxicodendron.

OF HERBACEOUS PLANTS OF THE COARSER SORT.

<i>Phytolacca decandra.</i>	<i>Ambrosia artemisiæfolia.</i>
<i>Leonurus Cardiacæ.</i>	<i>Asclepias Cornuti.</i>
<i>Nepeta Cattaria.</i>	<i>Asclepias pulchra.</i>
<i>Urtica gracilis.</i>	<i>Verbascum Thapsus.</i>
<i>Urtica dioica.</i>	<i>Erigeron sp.</i>
<i>Sonchus arvensis.</i>	<i>Aster Novæ Angliæ.</i>
<i>Lactuca elongata.</i>	<i>Aster corymbosus.</i>
<i>Nabalus albus.</i>	<i>Aster Radula.</i>
<i>Inula Helenium.</i>	<i>Aster lævis.</i>
<i>Chelone glabra.</i>	<i>Aster simplex.</i>
<i>Eupatorium purpureum.</i>	<i>Aster longifolius.</i>
<i>Eupatorium perfoliatum.</i>	<i>Aster cordifolius.</i>
<i>Verbena hastata.</i>	<i>Diplopappus linariifolius.</i>
<i>Verbena urticifolia.</i>	<i>Diplopappus umbellatus.</i>
<i>Oenothera biennis.</i>	<i>Solidago bicolor.</i>
<i>Epilobium angustifolium.</i>	<i>Solidago cæsia.</i>
<i>Epilobium lineare.</i>	<i>Solidago stricta.</i>
<i>Baptisia tinctoria.</i>	<i>Solidago neglecta.</i>
<i>Rudbeckia laciniata.</i>	<i>Solidago odora.</i>
<i>Helianthus divaricatus.</i>	<i>Solidago Canadensis.</i>
<i>Tanacetum vulgare.</i>	<i>Solidago lanceolata.</i>

HERBACEOUS PLANTS OF MORE HUMBLE GROWTH.

<i>Impatiens fulva.</i>	<i>Polygonum hydropiperoides.</i>
<i>Galium asprellum.</i>	<i>Centaurea nigra.</i>
<i>Galium trifidum.</i>	<i>Maruta and Achillea.</i>
<i>Liatris scariosa.</i>	<i>Arum triphyllum.</i>
<i>Campanula glomerata.</i>	<i>Trillium cernuum.</i>
<i>Lysimachia stricta.</i>	<i>Xyris bulbosa.</i>
<i>Lysimachia quadrifolia.</i>	<i>Linaria Canadensis.</i>
<i>Convallaria racemosa.</i>	<i>Linaria vulgaris.</i>
<i>Uvularia sessilifolia.</i>	<i>Pedicularis Canadensis.</i>
<i>Uvularia perfoliata.</i>	<i>Osmunda regalis.</i>
<i>Ranunculus sp.</i>	<i>Osmunda cinnamomea.</i>
<i>Aquilegia Canadensis.</i>	<i>Gentiana Andrewsii.</i>
<i>Hypericum perforatum.</i>	<i>Saxifraga vernalis.</i>
<i>Anemone nemorosa.</i>	<i>Thalictrum dioicum.</i>
<i>Anemone Virginiana.</i>	<i>Thalictrum anemonoides.</i>
<i>Hypoxis erecta.</i>	<i>Lilium Canadense.</i>
<i>Houstonia cerulea.</i>	<i>Gerardia flava.</i>
<i>Hepatica triloba.</i>	<i>Gerardia purpurea.</i>
<i>Agrimonia Eupatoria.</i>	<i>Geum rivale.</i>
<i>Viola rotundifolia.</i>	<i>Geranium maculatum.</i>
<i>Viola pubescens.</i>	<i>Geranium Robertianum.</i>
<i>Cistus Canadensis.</i>	<i>Aralia trifolia.</i>
<i>Antennaria margaritacea.</i>	<i>Apocynum androsæmifolium.</i>
<i>Antennaria plantaginifolia.</i>	<i>Polygala sanguinea.</i>
<i>Gnaphalium polycephalum.</i>	<i>Equisetum arvense.</i>
<i>Polygonum sagittatum.</i>	<i>Cuscuta Americana.</i>
<i>Polygonum Persicaria.</i>	

Most of these plants grew in great profusion, and not as scattered specimens. So true was this of the shrubs and coarser herbaceous plants that on several occasions entire arbors were built of them in years long past at autumnal exhibitions of this institution.

Clematis and Apios could be gathered in wreathing festoons of flowers, and large quantities of the colored

fruits, of species of *Cornus*, *Viburnum*, *Cratægus*, and *Sambucus* in their season, added not a little to the display. Of the above plants, once so common in Dark Lane but now lost from the suburbs, or yearly growing more distant, may be mentioned

Campanula glomerata.
Centaurea nigra.
Xyris bulbosa.
 Species of Bellworts and of
 Solomon's seal,
Trillium cernuum,

Gentiana Andrewsii,
Geum rivale,
 Sp. of *Galium*,
 Sp. of *Orchis*,
Rhus venenata.
Apios tuberosa, and others.

The foregoing list of plants of this remarkable locality, is very imperfect and could be much increased by mentioning the naturalized and more common plants which were also abundant. If, however, we have maintained the claim so justly due this noted locality, we shall not have given these facts in vain, and therefore close this article by expressing the wish that the more recent disciples and amateurs of this interesting science, would note down and preserve in durable form, the plants that still occupy the individual localities that remain to us undisturbed, in the suburbs of our city.



FIELD MEETING AT BRADFORD.

(Continued from p. 96.)

THE time having been entirely occupied by the speakers already mentioned, there was no opportunity for the botanists to present their collections of rarities, which was much regretted by all. Mr. George D. Phippen has kindly presented the following report of his forenoon's excursion.

The botanical party, who dispensed with carriages, probably bore more of the heat and burden of the day than any other of the several extempore organizations, in their three or four mile tramp of meadow and woodland, finished off by skirting a portion of the banks of the Merrimac River. Among the forms met with and collected there seemed to be an unusual absence of Ericaceous plants; no *Kalmias*, *Vacciniums*, *Andromedas* or *Pyrolas* were brought in, and but a speci-

men or two of the *Azalea viscosa*; though a few others may have been passed on the route. Very fine specimens of *Pogonia ophioglossoides*, remarkable for its delicate and peculiar fragrance were collected, also an Orchis or two, alike denizens of the bog.

Numerous blossoms of the starry *Hypoxis* twinkled low among the thin shrubbery; interesting to the botanist, but to the superficial observer scarce distinguishable from a *Potentilla* or *Ranunculus*, genera peculiarly abundant at this time. In the low lands where the party, including several ladies, all damped their feet, were fine plants of *Geum rivale* and *Saxifraga Pennsylvanica* just passing out of flower; also the obtrusive Green Hellebore with its large plaited leaves and abundant green flowers. To a majority of our party the most novel plant seen was a brilliant patch of *Castilleja coccinea* or painted cup, though not considered uncommon is yet rare in the vicinity of Salem.

The great heat of the day, and the hour high noon, rather deadened the usual and peculiar zeal of collectors. The last object of interest remembered being the *Betula lenta*, or black birch tree, whose branches overhung the river's bank. A hasty glance at the grounds of the residents as we listlessly passed to the shaded seats and welcome tables, provided upon the Common, demonstrated a refined taste. Among the trees and shrubs were noticed the *Magnolia tripetala* and other rare shrubs and plants.

As there was no opportunity given the botanical party to report, and as the collected flowers before the meeting closed had become limp and undistinguishable, we must guess at what they might have said.

The meeting then took a recess to enable the members and their friends to visit the building.

Bradford Academy is the oldest seminary for young ladies in the State. Founded in 1803, and incorporated in 1804, it has been in operation ever since. A new building has just been erected for the use of the school, bringing the boarding and school departments under the same roof. This new building is delightfully situated in the centre of an area of about twelve acres of land. The location is elevated and commands a large extent of country on every side, giving fresh invigorating air, with unsurpassed beauty of prospect. The healthfulness of this location has been abundantly proved during the past years of the school. The structure is in the form of a cross, four stories high, and is built of brick, with underpinnings and facings of granite. Corridors run through the building from east to west, a distance of two hundred and sixteen feet, affording delightful and healthful promenades when inclement weather forbids exercise out of doors. A parlor and two bedrooms constitute a suite of rooms for four pu-

pils. These rooms are twelve and eleven feet high, newly furnished, and receive a full supply of pure air and sunlight. The school halls, recitation rooms, parlors, rooms for business, bathing rooms and closets, are all on a most generous scale, whether for convenience, health or comfort. The entire building is heated by steam, and lighted by gas. No effort or expense has been spared to make this a model establishment.

After going over the building the party again met in the Hall and listened to some elocutionary exercises conducted in fine style, showing great proficiency on the part of the pupils and efficiency on the part of the teachers. The meeting then adjourned.

At 5 o'clock the visitors took the train for home, much delighted with their visit and the hospitable manner in which they were welcomed by the citizens of Bradford.



FIELD MEETING AT SWAMPSCOTT, WEDNESDAY, JULY 21, 1870.

THE second field meeting, the present season, was held at Swampscott this day.

The morning was not auspicious for a large attendance, the sky being overcast by clouds, which, however, disappeared as the day advanced, and the later trains brought a large addition, so that the afternoon session was fully attended.

After leaving the baskets at the Town Hall, which was the place of rendezvous for the day, all were quickly dispersed about the town; some went to the woods, and roamed over the forest hills and dales in search of wild flowers and rare specimens of plants; others to the seashore, and sought the shells and other wonders from the briny deep. Those who had an eye to the beauties of art took a quiet walk through the streets and admired the beautiful suburban residences and neat cottages embowered in ivy and other vines.

At 1 P. M. the various parties returned to the Hall, where the baskets had been stored for the collation. At 3 P. M. the session for discussion, etc., was held, the President in the chair.

The records of preceding meeting read.

The following correspondence was announced by the Secretary:

From American Antiquarian Society, Worcester, June 19; Aiken, William E. A., Baltimore, Md., June 25; Arnold, George, Boston, July 5; Bronson Library, Waterbury, Conn., June 28; Barton, E. M., Worcester, July 1; Boyd, W. H., Washington, D. C., June 12, 16, 27, July 2, 12; Buffalo Historical Society, June 16, July 11; Challen, Howard, Philadelphia, July 1; Cook, George H., New Brunswick, N. J., June 27; Duncan, M. W., Haverhill, June 27; Greene, S. A., Boston,

June 23; Harlman, W. H., Louisville, Ky., June 22; Historical and Philosophical Society, Cincinnati, Ohio, June 21, 27; How, Joseph, Methuen, July 8; Hlsley, F. J., Newark, N. J., June 25; Lunt, William P., Boston, July 11; Morris, Robert, Chicago, Illinois, July —; Moravian Historical Society, Bethlehem, June 19; Niven, James, Saugus, July 8; New England Historic-Genealogical Society, Boston, June 16, July 9; New York Historical Society, New York City, June 16, July 9; Ohio Mechanics Institute, Cincinnati, O., June 16; Phippen, George D., Salem, June 16; Public Library, Boston, June 24; Preble, George H., Mare Island, June 21; Rhode Island Historical Society, Providence, R. I.; Smithsonian Institute, Washington, D. C., July 20; Thompson, Waldo, Lynn, July 13; Tracy, C. M., Lynn, July 6, 8, 18; Upham, W. P., Providence, R. I., July 18; Vincent, Frances, Wilmington, Delaware, June 28.

The Librarian reported the following additions :

By Donation.

ADDITION TO DIRECTORIES. Washington and Georgetown, 1834-'70, 18 vols. 8vo. Baltimore City, 1 vol. 8vo. Richmond and Fifty Counties of Virginia, 1 vol. 8vo. Cleveland, 3 vols. 8vo. Susquehanna Railroad, 1 vol. 8vo. Trenton, 2 vols. 8vo. Columbus, 1 vol. 8vo. Atlanta, 1 vol. 12mo. Paterson, 2 vols. 8vo. Boyd's Business, 2 vols. 8vo. Jersey City, 3 vols. 8vo. Newark Business, 2 vols. 8vo. New Jersey State, 1 vol. 8vo. Camden, 1 vol. 8vo. U. S. Druggists, 1 vol. 12mo. Merchants and Bankers, 1 vol. 8vo. Boston and Albany Railway, 1 vol. 8vo. Northern Railroad Business, 1 vol. 8vo. New York State Business, 1 vol. 8vo. New York City, 3 vols. 8vo. Poughkeepsie, 2 vols. 8vo. Oneida County, 1 vol. 8vo. Syracuse, 1 vol. 8vo. Auburn, 1 vol. 8vo. Elmira, 1 vol. 8vo. Binghamton, 2 vols. 8vo. Syracuse and Onondaga County, 1 vol. 8vo. Rome, 2 vols. 8vo. Schenectady, 1 vol. 12mo. Saratoga, 1 vol. 8vo. Brooklyn Business, 1 vol. 12mo. Wilmington, 2 vols. 8vo. Delaware State, 1 vol. 8vo. Indianapolis, 7 vols. 8vo. Chicago, 2 vols. 8vo. Milwaukee, 2 vols. 8vo. New Orleans, 3 vols. 8vo. National Calendar, 2 vols. 12mo. Bridgeport, 1 vol. 12mo. Norwich, 1 vol. 8vo. Hartford, 1 vol. 8vo. Philadelphia, 18 vols. 8vo. Philadelphia Business, 1 vol. 8vo. Pittsburgh and Allegheny, 1 vol. 8vo. Lancaster, 1 vol. 8vo. Harrisburg, 1 vol. 8vo. Williamsport and Lock Haven, 1 vol. 8vo. Erie, 1 vol. 8vo. Louisville, 1 vol. 8vo. Railway Business, 1 vol. 8vo. Kentucky State Gazetteer and Business, 1 vol. 8vo.

BUTLER, BENJAMIN F., M. C. Causes of the Reduction of American Tonnage. Chandler's Speech in U. S. S. on "Proposed Annexation of Winnipeg. Hoar's Speech in U. S. H. R., on "Universal Education." Butler's Speech in U. S. H. R., on "Independence of Cuba." Ambler's Speech in U. S. H. R., on "Belligerent Rights of Cuba." Monthly Report on Agriculture for May and June, 1870. Butler's Address at Woodstock, Conn., on "Suggestions of the Effect of an Imported Laboring Class upon American Institutions."

BELLEVUE HOSPITAL, MEDICAL COLLEGE. Annual Circular and Catalogue, 1870-'71.

COGSWELL, GEORGE, of Bradford. A Memorial of Bradford Academy, 1 vol. 8vo. Boston, 1870.

COLE, MRS. NANCY D. Monthly Journal American Unitarian Association for June, 1869.

DUNCAN, MRS. M. W., of Haverhill. In Memoriam, James H. Duncan, 1 vol. 4to, Cambridge.

FARNUM, JOSEPH. White's Dental Catalogue, 1867. 1 vol. 8vo.

GAFFIELD, THOMAS, of Boston. Waterston's Address on the Life and Character of Thomas Sherwin. 1 vol. 8vo. Boston, 1870.

GREEN, SAMUEL A., of Boston. Miscellaneous pamphlets, 28.

HOWARD, J. J. *Miscellanea Genealogica et Heraldica*, April, 1870.

LSLEY, FERDINAND I., of Newark, N. J. *Augusta City Directory*, 1 vol. 8vo. *Newark Directories*, 5 vols. 8vo. *St. Paul Directory*, 1 vol. 8vo. *New Orleans Directory*, 2 vols. 8vo. *Portland, Oregon, Directory*, 1 vol. 8vo. *Mobile Directory*, 3 vols. 8vo. *Austin Directory*, 1 vol. 8vo. *Richmond Directory*, 1 vol. 8vo. *Memphis Directory*, 1 vol. 8vo. *New Haven Directory*, 1 vol. 8vo. *Virginia City, Gold Hill, Silver and American City Directory*, 1 vol. 8vo.

JAMES, THOMAS P., of Philadelphia. *Proceedings of American Pomological Society for 1864 and 1867*.

LEE, JOHN C. *Commercial Bulletin for June*, 1870.

MUNSELL, JOEL, of Albany, N. Y. *Miscellaneous pamphlets*, 13.

PALFRAT, C. W. *Anderson's Memorial Address at Antietam National Cemetery*, May 30, 1870.

PARSONS, C. W., of Providence, R. I. *Miscellaneous pamphlets*, 22.

RHODE ISLAND HISTORICAL SOCIETY. *Rhode Island Colonial Records, 1776-'83*, 2 vols. 8vo. *Miscellaneous pamphlets*, 86.

RHODES, EDWARD S., of Providence, R. I. *City Documents*, 45 pamphlets.

SNOW, MISS M. P. *Forty-seven volumes of School Books*.

STICKNEY, M. A. *Seven Miscellaneous volumes*.

SNOW, E. M., of Providence, R. I. *Miscellaneous pamphlets*, 13.

SUMNER, Hon. CHARLES, U. S. S. *Navy Register of the U. S. for 1870*. *Official Army Register for 1870*. *Butler's Speech in U. S. H. R. June 3, 1870, on "Internal Tax."* *Commerce and Navigation, 1868-'69*, 2 vols. 8vo. *Finance Report, 1869*, 1 vol. 8vo. *Report on Retrenchment, 1870*, 1 vol. 8vo. *Report on Heavy Ordnance, 1869*, 1 vol. 8vo. *U. S. Geological Survey of Colorado and New Mexico, 1869*, 1 vol. 8vo. *Sumner's Speech in U. S. S. June 10, 1870, on "Abolition of Franking."* *Paris Expedition. Report on Weights, Measures and Coins, 1867*. *Scott's Speech in U. S. S. June 22, 23, 1870, on "Income Tax."* *Monthly Report of Agriculture for May and June, 1870*. *Congressional Directory, 2d Session 41st Congress of U. S. A.*

THORNTON, J. WINGATE, of Boston. *Sprague's Discourse Commemorate of Rev. Wm. Allen*, 8vo pamph., Albany, 1868.

TURNER, ALFRED S., of Boston. *Boston Municipal Register, 1870*, 1 vol. 8vo, Boston, 1870. *Auditor's Report of Boston and County of Suffolk for 1868-9*, 1 vol. 8vo, Boston, 1869.

UPHAM, J. BAXTER, of Boston. *Boston Medical and Surgical Journal*, 8 Nos. *Miscellaneous pamphlets*, 90.

UPTON, JAMES. *Harper's Family Library, Vol. 1-157*, 157 vols. 12mo, New York, 1837-1842.

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U. S. WAR DEPARTMENT. *Letters from the South, relating to the Condition of the Freedmen*, 8vo pamph., 1870.

WATERS, H. FITZ. *Miscellaneous pamphlets*, 60.

WHEATLAND, M. G. *Miscellaneous vols. 81*. *Miscellaneous pamphlets*, 286.

WILDER, MARSHALL P., of Dorchester. *Sheppard's Memoir of M. P. Wilder*, pamph. Boston, 1867. *Past and Present*, 8vo pamph., Boston, 1870.

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ALBANY INSTITUTE. *Manual*, March, 1870, 8vo pamph.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. *Archives des Sciences Physiques et Naturelles*, No. 149, Mai 15, 1870, 8vo pamph., Genève, 1870.

BOSTON PUBLIC LIBRARY. *Bulletin for June*, 1870.

FIRE LANDS HISTORICAL SOCIETY. *The Fire Lands Pioneer for June*, 1870.

K. K. ZOOLOGISCHE-BOTANISCHE GESELLSCHAFT. Verhandlungen der, Jahrg, 1869, 8vo pamph., Wien, 1869. Commelinaceæ Indicæ, Imprimis Archipelagi Indici, adjectis nonnullis hisce terris alienis auctore Carolo Hasskall, 8vo pamph., Vindobonæ, 1870.

MASSACHUSETTS HISTORICAL SOCIETY. Catalogue of the Private Library of Thomas Dowse, 8vo pamph., Boston, 1870.

MERCANTILE LIBRARY ASSOCIATION. Forty-ninth Annual Report of the Board of Directors, 8vo pamph., New York, 1870.

MUSEUM OF COMPARATIVE ZOOLOGY. Annual Report of the Trustees, 1869.

NATURWISSENSCHAFTLICHEN VEREINE ZU BREMEN. Abhandlungen her aus gegeben, 8vo pamph., Bremen, 1870.

NATURWISSENSCHAFTLICHER VEREIN FÜR SACHSEN UND THURINGEN. Zeitschrift für die gesammten Naturwissenschaften Jahrg, 1869, 2 pamphs. 8vo, Berlin.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. The New England Historical and Genealogical Register, July, 1870.

NEW YORK LYCEUM OF NATURAL HISTORY. Annals, Vol. ix, sigs. 21, 22.

OHIO MECHANICS' INSTITUTE. Forty-second Annual Report of Directors.

PEABODY INSTITUTE, Baltimore, Md. Mr. Peabody's Letter of September, 1869. Third Annual Report of the Provost, 1870, 8vo pamph.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. Proceedings, January and April, 1870.

PUBLISHERS. American Journal of Science. American Literary Gazette. American Naturalist. Book Buyer. Christian World. Cosmos. Eclectic. Essex Banner. Gardner's Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Journal de Conchyliologie. Lawrence American. L' Investigateur. Lippincott's Monthly Bulletin. Land and Water. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Pavillion. Peabody Press. Semi-Monthly Visitor. Sothoran's Catalogue. The Tocsin.

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VEREIN ZUR BEFÖRDERUNG DES GARTENBAUES. Wochenschrift des Vereins zur Beförderung des Gartenbaues in den Königl. Preuss. Staaten für Gärtnerei und Pflanzenkunde, 1869, 52 Nos., 4to pamphs.

VEREIN FÜR ERDKUNDE UND VERWANDTE WISSENSCHAFT. Notizblatt des Vereins für Erdkunde und verwandte Wissenschaften zu Darmstadt und des mittelrheinischen geologischen Vereins 8vo, pamph., 1869.

The Superintendent of the Museum reported the following additions to the Museums of the Institute and Peabody Academy of Science.

CLEVELAND H. R. Skin of a Toncan, Skulls of Cavea Capybara and Alligators. Portions of Lower Jaw of Mastodon. Seeds, Nuts, etc. From the vicinity of Honda, on the Magdalena Rivers, U. S. A.

COLCORD, Mrs. H. M., of Peabody. Insects, Galls, etc., from Peabody.

HARRINGTON, C., of Salem. Collection of Nests of Native Birds.

HOLMES, A., of San Francisco, Cal. Bark, Cones, and Seeds of Sequoia gigantea. Lichens growing on dead wood, and the Nest of Tarantula (Mygale) from California.

JOHNSON, W. C., of Newburyport. White-tailed Remora (Echineis albicauda) taken at Newburyport.

LEBARON, J. F. Several specimens of Plants from Florida.

MUDGE, S. A. Fossil Shells.

NEWCOMB, R. L. A mounted specimen of Larus Smithsonianus from vicinity Salem.

OSGOOD, J. B. F. Specimen of *Sarcodes sanguinea* (Snow Plant) from Lake Tahoe, 6,024 feet above sea-level.

PETERSON, G. W. Young of *Limulus polyphemus* from Salem.

SMITHSONIAN INSTITUTION. Collections of Birds' Eggs from various localities, principally Arctic.

VALENTINE, Miss MARGARET P. Several pieces of Roman Pavement from Bransby, England.

WALKER, SAMUEL L. Specimen of *Rhombus maculatus* from Salem Harbor.

WATERS, W. C., of Boston. Kangaroo from Australia.

The President opened the meeting with a few general remarks upon the history of the place, mentioning that Swampscott in 1852 had a separate organization, having been previously a part of Lynn. The Indian name was *Wannasquomskut*, signifying at the cliff or rock summit, and hence modified into Swampscott. He then invited Rev. James T. Hewes to preside over the discussions of the afternoon—a vote having first been passed, that when this meeting adjourned it adjourn to 4 o'clock to-morrow (Thursday) afternoon, in the rooms at Salem.

Rev. Mr. HEWES was brief in his preliminary remarks, saying that he came here “to learn how to see,” and giving utterance, among other things, to the truthful idea that it is not necessary to go away from home to get recreation, instruction, or pleasure.

Mr. F. W. PUTNAM was requested to report on several fishes which had been placed on the table. These he stated were specimens of the Rock Cod and of the Pollock. He said that it was like “bringing coals to Newcastle” to come to Swampscott and talk about Codfish, but still there might be some points in the structure of the fishes now before him that might prove interesting to the meeting, and he would therefore call attention to them. He then gave a general account of the structure of the family of fishes of which the Cod and Pollock were members, stating how it differed from the families of which the Salmon, and Sea Perch, or “Connors,” were representatives. In this connection he called attention to the structure and position of the fins in the several orders of fishes, and their value as characters in distinguishing the orders and families. He also spoke of the peculiar modification of the fins of fishes, some serving as aids to the movements of the body in swimming. Some fishes swim entirely by their dorsal fins, others by the pectorals, while in still others the pectorals and ventrals were so modified as to be organs of locomotion through the air or on land. He then called attention to the peculiar structure of the ventral, by which means a sucking disk or cup was formed, giving the fish the power of attaching itself with great strength to rocks or other materials; and to the peculiar structure of the dorsal fin of the Remora, or Shark sucker, which fin was so modified as to form a sucking disk on top of the head, enabling the fish to make itself fast by

the top of its head to the under side of sharks, or other large fishes, or to the bottoms of vessels, etc.

He would take this occasion to record the addition of two species of fishes to the fauna of Essex County waters. One of these was a Remora, having the peculiar structure of the head just alluded to. This species now added to the list of county fishes was the White-tailed Remora, the *Echeneis albicauda* of Mitchell. The specimen was taken at the mouth of the Merrimack River last month, and presented to the Peabody Academy by W. C. Johnson, Esq., of Newburyport. The other addition to the county fishes was that of two specimens of the Spotted Plaice, *Pleuronectes maculatus* of Mitchell, as given in Storer's last report, p. 204. This fish is very common at Cape Cod and the south, but the two specimens presented to the Academy by Mr. Samuel L. Walker of Salem, were the first that had been recorded as taken inside the bay, and having been caught in Salem harbor they form an interesting addition to the county fauna.

Mr. Putnam also stated that a gentleman present had placed a bottle on the table containing the Saw flies developed from the Current worm, of which so much was said at the last meeting. These Saw flies had gone through their transformations in the bottle in nine days. There was no earth in the bottle and it was an interesting fact to know that they could transform without it.

Prof. E. S. MORSE described some of the more common forms of animal life as we find them in our rambles along the shore, showing the distinctive features of the different species of mollusks, with great clearness. A bottle of marine worms was exhibited and described in this connection, showing the wonderful order and system which characterizes even these lower animals, and also that common animal the barnacle, which was formerly included among the mollusca before their organization was fully understood, and is now placed among the articulates.

Mr. HYATT made some remarks upon the generally accepted views of the upheaval and subsidence of continents, and mentioned that he lately found a raised beach on Marblehead Neck, some eight or ten feet above the present limit of high tide. This was a smooth water worn porphyry cliff. The extreme friability of this porphyry, and its rapid disintegration, as well as the form of the neighboring cliffs, show that the elevation must have been comparatively recent. The speaker then suggested that Dr. Winslow, who was present, should explain his views with regard to the subsidence of continents, which although very different from those commonly received, had been matured after many years of travel and study, and would undoubtedly be interesting to the Institute.

Dr. C. F. WINSLOW, of Boston responded to the call of the chair

upon a topic by which the attention of the Institute was called by Mr. Hyatt. This was upon the dynamics of geology, a subject to which Dr. Winslow, in the course of his extensive travels, had given special attention. The Dr. stated that his views of the causes of the general geographical features of the globe, as they at present existed, differed from the common theories of geology. He was compelled by his observations to believe in sudden *subsidences* of vast continental areas rather than in the *slow upheavals* of hills, mountain chains and continents. His attention was specially called to this subject when visiting the island of St. Paul's, in the Indian ocean. This is an island many hundred feet high, constituting an extinct crater, one side of which has sunk lower than the general subsidence of the land, leaving a channel of seventy feet wide, through which the sea flows with a depth of nine feet. The depth of water in the crater is two hundred feet, and is the same depth outside the bar, and for several miles on the south eastern side of the island. The ocean also presented a discolored appearance for one or two days sail to the south east, indicative of soundings with no very great length of line. That a great continent once occupied the Indian Ocean is the inference. Continuous observation of the various coasts of continents and great islands, and the various aspects of declivities and dislocated strata in high mountainous regions, as of the Atlas, Sierra Nevada, Andes, and Alps, and appearances even among some of the South Sea Islands, had slowly but strongly convinced him that the present theory ought to be carefully examined by geologists, with a view to its correction. He had presented two memoirs on this subject to the Boston Society of Natural History, in years past; and has subsequently found his observations and opinions sustained by those of DeLuc, a Swiss naturalist, whose observations upon the appearances of the Jura, led him (about the middle of the last century) to declare that these mountains resulted from subsidences rather than from upheavals.

This question of subsidence, however, led to other geological considerations of a very important character. It involved the necessity of vast caverns between the crust and molten nucleus of the planet, into which the crust, from cycle to cycle, has been rent or plunged. He had shown these to exist, as might be seen by his memoirs, under the northern part of the South American continent, under the Gulf of Mexico and Central America, into which all that area of the planet might at any moment fall, and the oceans be changed. The planet, when life first appeared, must have been five hundred miles larger in all its diameters. This view would comport well with the knowledge recently attained, relative to the consideration of physical force. It would also extend this knowledge in cosmical directions.

[To be concluded.]

BULLETIN

OF THE

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GILES COREY & GOODWYFE COREY.

A BALLAD OF 1692.*

COME all New England Men,
And hearken unto me,
And I will tell what did befall
Upon ye Gallows Tree.

In Salem Village was the place,
As I did heare them saye,
And Goodwyfe Corey was her name
Upon that paynfull daye :

This Goody Corey was a Witch
The people did believe,
Afflicting of the Godly ones
Did make them sadlie Greave.

There were two pyous Matron Dames,
And goodly Maidens Three,

*This ballad was "handed in for preservation" to the *Salem Observer*, and appeared in the issue of April 13, 1850. It has since been extensively copied in other publications, and is inserted here as appropriate in connection with the subject of debate at the Field Meeting at West Peabody. The perfect correspondence with the style of that period has caused it to be considered a veritable production of the Witchcraft times; and a copy of it which appeared some years since in a western paper, was headed "An amusing relic of Puritanism, written during the Witchcraft Mania in Salem." It was written by Fitch Poole, Esq., of Peabody.

—EDITORS.

That cryed upon this heynous witch,
As you shall quicklie see.

Goodwyfe Bibber she was one,
And Goodwyfe Goodall two,
These were ye sore afflicted ones
By Fyts and Pynchings too :

And those Three Damsels fair,
She worried them full sore,
As all could see upon their Arms
The divers Marks they bore.

And when before the Magistrates
For tryall she did stand,
This Wicked Witch did lye to them
While holding up her hand :

“ I pray you all Good Gentlemen
Come listen unto me,
I never harmed those two Goodwyfes
Nor yet these Children Three : ”

“ I call upon my Saviour Lord,”
(Blasphemously she sayd)
“ As Witness of my Innocence
In this my hour of need.”

The Godly Ministers were shockt
This Witch-prayer for to heare,
And soone did see ye Black Man* there
A whispering in her eare.

The Magistrates did saye to her
“ Most surely thou doth lye,
Confess thou here thy hellish deeds
Or ill death thou must dye.”

She rent her Cloaths, she tore her Haire,
And lowdly she did crye,
“ May Christe forgive mine Enimies
When I am called to die.”

This Goodwyfe had a Goodman too,
Giles Corey was his name,
In Salem Gaol they shut him in
With his blasphemous Dame.

* Satan.

Giles Corey was a Wizzard strong,
 A stubborn wretch was he,
 And fitt was he to hang on high
 Upon ye Locust Tree :

So when before ye Magistrates
 For tryall he did come,
 He would no true confession make
 But was compleatly dumbe.

“Giles Corey,” said ye magistrate,
 “What hast thou hear to pleade
 To these who now accuse thy soule
 Of crymes and horrid deed.”

Giles Corey — he sayde not a Word.
 No single Word spake he :
 “Giles Corey” sayth ye Magistrate,
 “We’ll press it out of thee.”

They got them then a good wide Board,
 They layde it on his Breast,
 They loaded it with heavy Stones,
 And hard upon him prest.

“More weight,” now sayd this wretched man,
 “More weight,” again he cryed,
 And he did no Confession make,
 But wickedly he dyed.

Dame Corey lived but six dayes more,
 But six dayes more lived she,
 For She was hung at Gallows Hill
 Upon ye Locust Tree.

Rejoice all true New-England Men,
 Let Grace still more abounde,
 Go search ye Land with myght and main,
 Till all these Imps be founde ;

And that will be a glorious Daye,
 A goodlie Sight to see,
 When you shall hang these Brands of fyre
 Upon ye Gallows Tree.

FIELD MEETING AT SWAMPSCOTT, WEDNESDAY,
JULY 20, 1870.

[Continued from page 112.]

THE appropriation of the force (radiated in the form of heat, magnetism and electricity from a contracting globe, formerly in a state of general fusion) by matter on the surface, and under the guidance of an intelligent and creative Providence, would end in the vast accumulation of organic forms deposited in times past, in the countless strata of the planet's crust. Mechanical force was absolutely necessary to the production, growth, and multiplication of all organisms, whether plant or animals. On present theories all heat is, and has been, radiated into space. This has been going on for infinite cycles, from all cosmical masses, and still the cold of space is intense. The lowest estimate makes it more than 150° below zero. Dr. Winslow thought the Providence of the universal mind could not permit such waste of the very force which is so necessary for the creation of the organic objects that cover the land and fill the seas of the globe.

This was the working power of nature, and must be *conserved* and never exhausted nor wasted. Space, in accordance with his investigations and reasonings, was a vacuum and not a plenum. All force radiated from the surface of the globe was employed in the work going on incessantly in the surface molecules, in order to embellish the planet and perpetuate the fluctuating changes which occur upon it. He hoped the investigations of others would be directed toward this subject, which to naturalists, in an especial manner, was of the highest importance, as destined to throw light on many phenomena heretofore obscure.

Mr. HYATT, who had been referred to as an advocate of the theory of upheaval, said he did not know that Dr. Winslow's process of reasoning was not quite as satisfactory as that of those who advance the opposite view, and though he was rather inclined to the latter, he had in his explanations simply explained a theory that was generally accepted by geologists as a correct one. Other questions incidental to the topics, were raised, which caused Mr. Hewes to suggest that the orators appeared to differ in geology as well as in theology.

Mr. S. B. BUTTRICK of Salem, presented a list of twenty-four species of native plants, which he had found in flower during the forenoon's excursion.

Mr. W. P. UPHAM of Salem, was next called upon to give some facts in reference to the history of the town. He stated that what is now Swampscott, was originally a grant to John Humphrey, in 1635. In 1641 it was sold by him to Lady Deborah Moody, and occupied by her

until her removal to Long Island a few years afterwards. It was then leased to Daniel King, who, in 1651, took a conveyance of the farm, which consisted of twelve hundred acres, with the buildings. Mr. Upham read a copy of a letter from the agent of Lady Moody to Mr. King, in 1649-50, relating to the purchase of the farm then known as Swampscott—the original still being preserved among the old papers in the Court House. In this letter was given a list of articles which Lady Moody wished Mr. King to send to her in part payment for the farm. This list was valuable, as showing the needs of the time, in the way of household furniture and farm utensils, etc.

A vote of thanks was passed to the Selectmen of Swampscott, for the use of this hall; to Mr. E. R. Mudge, and other citizens, for kind attentions.



ADJOURNED MEETING, FRIDAY, JULY 22, 1870.

John D. Eaton, Edward C. Cheever, William P. Andrews, J. Lyman Silsbee, all of Salem, were duly elected members.



FIELD MEETING AT WEST PEABODY, THURSDAY, AUGUST 4, 1870.

THE meeting was held at the spacious hall in the new school-house; thither the excursionists wended their way on alighting from the cars at the station near the crossing of the Salem and Lowell, and the Danvers and Georgetown Railroads, under the guidance of several of the leading citizens who were in attendance, and who extended to them a cordial welcome. After depositing their baskets the company divided into parties in search of objects for the gratification of special tastes. Some were interested in the historical associations connected with this spot, which is on the original farm of Giles Corey, who was pressed to death, and whose wife was executed in the witchcraft prosecutions in 1692; his house was situated about one hundred yards from the station, on land now owned by Benjamin Taylor. The community in this vicinity are firmly fixed on their paternal acres, many of the estates having come down to their present owners through a lineal descent of six generations. Some of the residences are very ancient; one built about two hundred and thirty years ago was visited by many who were heartily welcomed by the present proprietor. In this school district, comprising an area of some three square miles, there are one hundred and sixteen voters, and this number has not materially changed during the past one hundred years. The old cus-

tom of burying their dead on their own premises here prevails, and within these three square miles are twenty-three burial places.

The magnificent flora attracted several to the edges of the woods and ponds, and numerous beautiful specimens were collected. The animal kingdom also furnished some rare contributions to the findings of the day. Many ascended an elevated point of land and enjoyed a widely extended view of the surrounding country and the ocean in the distance. Some visited the Winona Mills, and were interested in examining the different varieties of cassimeres, ladies' cloth, etc., there manufactured, and inspecting the various processes through which the material passes, from the bale to the beautiful cloth. The mills are owned by Messrs. Train & Pollock, who employ about seventy-five operatives. The motive power is an overshot wheel of about forty horse power. At 1.30 P. M. the company re-assembled at the school house, which is a fine building, eligibly situated, with two large school rooms on the first floor, one department under the charge of a male principal and the other of a female assistant; and in the second story is a commodious hall, used not only for school purposes but also as a lecture and concert room for the neighborhood, and for religious services on the Sabbath. Here the collation was partaken and at 3 o'clock the meeting for the reports and speaking was called to order by the President, who requested Mr. James H. Emerton to act as Secretary, in the absence of that officer.

The records of the preceding meeting were read.

The following correspondence was announced:—

Robert Brown, Jr., Cincinnati, July 22; J. C. Holmes, Detroit, July 30; A. H. Johnson, Bradford, Aug. 2; Kaiserliche Akademie der Wissenschaften in Wien, Dec. 28, 1839; Nassuasischen Verein für Naturkunde, Wiesbaden, Dec. 1, 1839; A. J. Phipps, Boston, Aug. 2; G. H. Preble, San Francisco, Cal., July 18; Royal Physico-Economical Society at Konigsburg, 9, 4, 1870; C. M. Tracy, Lynn, July 30; C. A. Walker, Chelsea, July 20.

The LIBRARIAN reported the following additions to the library:

By Donations.

ANDREWS, EDMUND, of Chicago, Ill. The North America Lakes, considered as Chronometers of Post Glacial Time, 8vo pamph., Chicago, 1870.

BRONSON LIBRARY, of Waterbury, Conn. First Annual Report, 1870.

CHASE, Miss MARIA, Chinese Repository, 52 numbers. White's Eulogy on Bowditch, 8vo pamph.

CONGRESS LIBRARY, Washington, D. C. Catalogue of Books added in 1869, 1 vol. 4to, Washington, 1870.

COOK, WM. S. Massachusetts Business Directory for 1856. Business Directory of the Principal Southern Cities, 1866-7.

HOLMES, J. C., of Detroit, Mich. Hand Book and Guide Map of the City of Detroit, 1870.

LEA, ISAAC, of Philadelphia, Pa. A Synopsis of the Family Unionidæ, 1 vol. 4to.

LEE, FRANCIS H. Westminster Review, 18 numbers. Edinburgh Review, 17 numbers. London Quarterly Review, 19 numbers.

LEE, JOHN C. Commercial Bulletin for July.

MANNING, ROBERT. Boston Directory, 1869, 1 vol. 8vo.

RANTOUL, R. S. Miscellaneous pamphlets 150, and 38 volumes.

ROPES, Rev. WM. L. Triennial Catalogue of the Theological Seminary, Andover, 1870.

STICKNEY, M. A. Miscellaneous pamphlets, 6.

WATERS, J. LINTON, of Chicago, Ill. Third Annual Report of the Brainerd Free Dispensary of Chicago for 1870, 8vo pamph. Edward's Chicago Directory, 1 vol. 8vo, Chicago, 1869.

YOUNG MEN'S CHRISTIAN ASSOCIATION, Worcester. Annual Report, 1870.

By Exchange.

AMERICAN ANTIQUARIAN SOCIETY. Proceedings at Annual Meeting, April 27, 1870.

BOSTON PUBLIC LIBRARY. Eighteenth Annual Report, 1870.

BOWDOIN COLLEGE. Catalogus Collegii Bowdoinensis, 1870, 8vo pamph.

KÖNIGLICHE PHYSIKALISCH-OEONOMISCHE GESELLSCHAFT ZU KÖNIGSBERG. Schriften 1867, 1868, 4to pamphlets.

NATURWISSENSCHAFTLICHE GESELLSCHAFT ISIS, in Dresden. Sitzungs-Berichte, von Carl Bley, Jahrg., 1870, 8vo pamph.

NATURHISTORISCHE VEREIN DER PREUSSISCHEN RHEINLANDE UND WESTPHALENS. Verhandlungen des Herausgegeben von Dr. C. J. Andrä. Bogen 1-14, 2 pamphlets, 8vo, Bonn, 1869.

PUBLISHERS. Book Buyer. Christian World. Cosmos. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Pavilion. Peabody Press. Semi-Monthly Visitor.

ROYAL SOCIETY, of London. Proceedings, Vol. xvii, No. 110-113, Vol. xviii, 114-118, 1869.

VEREIN FÜR NATURKUNDE WIESBADEN. Jahrbücher des, Jahrg., 21 and 22, 1867-8.

YALE COLLEGE. Statements of Yale College in 1870, 8vo pamph. Obituary Record of Graduates of Yale College, 1870. Supplement to the Obituary Record of Graduates of Yale College, 1860.

The SUPERINTENDENT announced the following donations:—

FRANK BUTLER, of Salem. Pectens from the Grand Banks, and Ducks' Eggs.

ROBERT BROOKHOUSE. An Albino Sand Martin from Rowley.

WILLIAM GARDNER of Salem. Eggs of the Canary Bird.

JOSHUA P. HASKELL of Marblehead. A large collection of Insects of Essex County.

JAMES KIMBALL of Salem. Several Insects from Florida.

ANNIE LANGDELL of Salem. Specimen of Dragon Fly (Aeschnaheros).

Mr. LEWIS of Salem. Specimen of Brown Bat.

ROBERT MANNING of Salem. Specimens of Black Walnuts grown in Salem.

J. A. PAINE of Salem. Specimen of Tomato Worm (Sphinx quinquemaculatus).

JOSEPH STICKNEY of Salem. Partial Skeleton of the Skate.

SAMUEL WALKER of Salem. Smooth-back flounder.

The PRESIDENT requested Mr. A. C. GOODELL, jr., to take the chair, who, with a few words of introduction, in which he alluded to some of the historical associations of the place, and to the fact that this was the first time that a field meeting had been held in this immediate locality, proceeded to introduce the several speakers.

GEORGE D. PHIPPEN spoke at some length on the importance of the study of Botany and the use of plants in the great economy of nature. He then gave particular accounts of many of the plants collected during the forenoon's excursions, of which there were a goodly number, both in quantity and variety. Among those which he specified, may be enumerated *Lobelia cardinalis*, the beautiful cardinal flower, which with its varieties may be easily transplanted into our gardens, and become one of the most attractive flowers in the *parterre*; the several species of *Spiræa*, the Orchis, Eupatorium, Gerardia, Rhexia, and others. A specimen of the common teasel used by woollen manufacturers was presented, and the question was raised as to the feasibility of its cultivation in this vicinity. Those used at Winona Mills were brought from a distance. It was stated that Richard Crowninshield, Esq., many years ago raised it in considerable quantities in this town, and supplied several mills.

Mr. JAMES H. EMERTON, of Salem, showed some very beautiful and varied specimens of galls, upon the leaves of the Walnut tree, and explained the habits of the insect which produces them. He depicted upon the blackboard some of the forms of the architecture of the webs of several species of spiders, as that of the *Agelena nevia* and *Epeira riparia*, and in reply to some queries he described their mandibles and the manner of biting. The bite, he said, was poisonous, but they seldom or never poisoned anybody, for the reason that they have no jaws of sufficient power to puncture the human skin; he had handled all sorts of spiders for years, with perfect freedom, and was never bitten.

Prof. E. S. MORSE spoke of the common grasshoppers, and explained wherein their growth differed from that of other insects which undergo a thorough metamorphosis; and why they are plenty in dry, and scarce in wet seasons. The eggs are deposited in the ground. In dry weather they all hatch, while continued moisture is fatal to them. He concluded with some general remarks in advocacy of a better knowledge of the rudiments of natural history, alluding to popular errors currently entertained, and which creep into the newspapers with a singular ignorance of the facts. The poisonous nature of spiders and snakes then became a topic of debate, participated in by Messrs. Morse, Emerton, Bancroft, Cooke, Spofford, and others.

At this time the intense lightning and loud peals of thunder, accompanying a very heavy shower which had suddenly come up, inter-

ferred somewhat with the proceedings of the meeting. In a few moments, however, quiet was restored, and the Chairman, after giving some account of the church founded here in 1672, called upon Mr. W. P. Upham for information as to the history of Giles Corey, upon whose homestead this meeting was held.

Mr. UPHAM stated that though he feared he should not be able to present much that would be specially interesting, the principal facts in the history of Giles Corey being probably well known to all present, yet, as he had some years ago carefully studied the history of this region for the purpose of ascertaining the true site of Corey's dwelling house, he might be able to give some information on this point. In strolling over these fields and pastures to-day he had found pleasure not only from the contemplation of the quiet and peaceful scenery of hill and dale, and the alternate views of forest and clearing, so charming to the eye, but from the associations that cluster round the place. Names are called to mind of men who lived here long ago, men of strong character, pioneers in the civilization of that day. To them these scenes were rendered familiar and dear through long years of toil and honorable endurance.

Our place of meeting to-day is at the very centre of what was once the homestead farm of Giles Corey, one of the martyrs of the Witchcraft Delusion of 1692. His first home in Salem was in a house which was situated near the Town Bridge, as it was called, a little to the northwest of the corner of Boston and Federal streets. There are indications that the western part of the town was first settled by a class of persons specially inclined to differ in religious affairs from those having the control of the church; possibly this may have first taken place under the leadership of Roger Williams, who lived, in 1635, in the house now standing on the west corner of Essex and North streets. However this may be, investigations recently made, show that among the families living during the earliest years between North street and the Town Bridge, were those of Verren, Phelps, Trusler, Kitchen, Cotta, Reeves, Morey, Pease, Shattuck, Gardner, Needham, Byshop, Moulton, Buffum, Alderman, Flint and Southwick; all of them more or less conspicuous as conscientious opponents of some of the religious doctrines of their time, and some of them well known in history as fearless defenders of their own peculiar faith. Giles Corey's nearest neighbor, before he removed to this farm, was Lawrence Southwick, whose daughter has been immortalized by Whittier for her heroic exhibition of that same spirit of unyielding devotion which afterwards cost poor Giles Corey his life.

In 1660 Corey purchased of Robert Goodell, fifty acres of land, which had been originally granted to Edward Giles, and also about sixty acres more of the heirs of John Alderman. In the fall of the prece-

ding year he had made a contract by which John Norton was to build him a house "twenty foot in length, fiftene in breadth and eight foot stud;" and here he lived from that time till his death in 1692. This farm extended on both sides of the road which passes in front of this school-house where we hold our meeting. Corey gave it to his sons-in-law, Wm. Cleeves and John Moulton, who divided it between them. Cleeves conveyed his share, which was on the west side of the road, to Nathaniel Hayward, who, in 1702, conveyed the northern part of it to Wm. Curtice. This is still known as "the Curtice field," and the old well and house-place, just north of the school house, marks the spot where Curtice lived. That part of the farm on the east side of the road was conveyed by John Moulton to Humphrey French, in 1695, together with the house in which Giles Corey had lived. French's heirs conveyed it to Nathaniel Gould, and from him it descended to John Clammons, who, in 1773, conveyed it to Andrew Curtice, who conveyed it to Jacob Goodale. In 1792 it was conveyed to Samuel Taylor, who, in 1847, gave it to his son Benjamin Taylor, who now owns it.

The spot where Corey's house stood is on the south side of the Salem and Lowell Railroad, about twenty rods west of the West Peabody Junction. All traces of it were removed a few years ago, but the site is identified both by the record history and by tradition.

The deed by which Giles Corey passed this farm over to his sons-in-law, Cleeves and Moulton, was probably first drawn up and signed in the jail at Salem, where he was confined under the accusation of witchcraft, as it is dated April 24, 1692, and one of the three witnesses to the deed, which also had the character of a will, was Wm. Dounton, keeper of the prison at Salem. It was finally executed at the jail at Ipswich, being acknowledged there July 25, 1692, before "Thomas Wade, Justice of the Peace." The property is described as follows, "all my land and meadow lying and being in ye bounds of Salem town," and "all my neat cattle and all other my stock upon the said farm or elsewhere, as likewise all my houseing." He speaks of himself as "lying under great trouble and affliction through which I am very weak in body but in perfect memory, knowing not how soon I may depart this life."

It is not unlikely that Giles Corey had already made up his mind to that determination to which he afterwards so firmly adhered, to refuse to plead either "guilty," or "not guilty," to the indictment for witchcraft, which had been brought against him. According to the ancient theory of English law, it was necessary that a person accused of a capital felony should voluntarily "put himself upon the country," by pleading to the indictment, before a trial could be had; probably this was required in order to give a kind of sanction to the subse-

quent conviction and execution. Where the accused party refused to plead, he was placed in close confinement (*en la prisone fort et dure*) with hardly any sustenance there to be kept "till he answered," "as those who refuse to be at the common law of the land." Afterwards the practice of pressing to death by loading with heavy weights, was introduced as a sort of mercy to the prisoner, shortening the duration of his torture. As no conviction or judgment could be had in such a case, the forfeiture of property, which would result from a conviction of a capital felony, was avoided; and numerous cases have occurred in England where the forfeiture of estates has been thus prevented. It was generally supposed, during the witchcraft trials of 1692, that confiscation would follow conviction, and this would probably have been the case had the delusion maintained its sway long enough for such a principle to take effect.

We may therefore believe that Giles Corey in enduring the protracted torture of being pressed to death, was actuated not by mere obstinacy, which would be wholly unaccountable and incredible, but by the determination to save his property from forfeiture, that it might be enjoyed after his death by his faithful sons-in-law, who alone had befriended him in this great emergency, while others of his family had deserted him.

The generous magnanimity and sentiment of gratitude which could prompt such a design, and the indomitable will and energy of purpose which could enable him to pass, unshrinking, through the terrible ordeal which a cruel and barbarous law required, excites our admiration and renders him worthy of being classed with those martyrs of history who have died in a cause which seemed good to them.

Mr. Upham then referred to Mr. William F. Poole, who was present, and who, he believed, could give some information as to the means taken to induce Gyles Corey to change his determination not to plead to the indictment for witchcraft.

Dr. JEREMIAH SPOFFORD of Gove land, spoke of some deeds of meadow land near here by Giles Corey, which had formerly been in his possession, but had been lost. He also said that fifty years ago he had heard a fork of the roads near by, spoken of as the place where Corey was buried.

Mr. WILLIAM F. POOLE was then called upon by the chairman, with some complimentary remarks on his historical writings, and an allusion to his article on "Cotton Mather and Salem Witchcraft," in the North American Review for April, 1869, as containing views which were different from those generally accepted in this community.

Mr. Poole remarked that though born and reared in what was then Salem, but since Danvers, South Danvers, and Peabody, and having been specially interested in the subject of witchcraft, he had never be-

fore visited this spot. In reply to the question propounded, he stated that measures were taken to cause Giles Corey to relent and plead. By the courtesy of the Massachusetts Historical Society he had recently the privilege of examining the manuscript Diary of Judge Sewall, who was a member of the court that tried the alleged witches. Judge Sewall made an entry on the 19th of September, 1692, stating that this day, about noon, Giles Corey was pressed to death at Salem for standing mute, or refusing to plead "guilty," or "not guilty." The Judge further states that much pains was used with him for two days by the court, one after another, and Capt. Richard Garduer of Nantucket, who had been his acquaintance, but all in vain.

No other instance of the infliction of this dreadful penalty has ever occurred in New England. Why did it occur in this case! No law permitting such a barbarity was ever on a New England statute book. There was no New England law in force at the time, by which witchcraft or any other capital crime could be punished. The government of Massachusetts Bay was in a transition state. The old charter of the colony had been taken away by the British Crown. For nearly six years the colony had been under the despotic rule of Sir Edmund Andros, or a temporary "council for the safety of the people." It was understood that the repeal of the charter vacated the laws enacted under it. The witchcraft excitement at Salem Village broke out in February, 1691-2, and when Sir Wm. Phips, appointed Governor under the new charter, arrived in Boston in May, 1692, the jails of Salem, Ipswich and Boston, were filled with persons committed for the crime of witchcraft, and awaiting trial. Many of them were the heads of families; their farm work was neglected, and, according to the custom of that period they were obliged to pay their own jail fees and expenses.

Gov. Phips arrived on Saturday, the 14th of May. On Monday the 16th, the government was organized. The council sat from day to day, and proceeded as rapidly as possible to appoint justices, sheriffs, coroners, and other officers for the several counties. On the 27th of May a special court was appointed for the trial of persons under arrest "for all manner of crimes and offences had, made, done or perpetrated within the counties of Suffolk, Essex, and Middlesex." Nothing was said in the commission about witchcraft. Under what law should the court act? There were no laws in force for the punishment of crime. The commission states under what law they were to act. They were instructed "to enquire of, hear and determine, for this time, according to the law and custom of England, and of this their Majesty's Province." As there were no Province laws, the latter clause of the sentence had then no meaning. A Province code, for the punishment of capital crimes, was not passed till October 29. The

judges therefore went into the trials for witchcraft under the English statute of James I. Giles Corey was not tried for witchcraft, but he came to his horrid death under the provisions of another English statute, for refusing to plead. It was English, and not New England barbarity which inflicted this dread penalty. Those judges were not inhuman men. The diary of Judge Sewall shows that they tried to save him from this ordeal. We know the personal character of these judges in other relations. They were under a delusion as to the phenomena and theory of witchcraft; but they were conscientious and honest men, and represented the temper and spirit of their times. Gov. Hutchinson, in an unpublished manuscript which I have recently found, says he cannot understand why they did not burn their witches, as was done in England, and as the statute, under which they acted, required. The public sentiment of that period was not shocked, at the time, by the penalties inflicted by the Court. Chief Justice Stoughton, who was the controlling mind in these transactions, received every vote for the same position when the Superior Court was regularly organized, on the 7th of December following. His associates, Richards, Winthrop, and Sewall, who also sat with him in the witch trials, were also reëlected, together with Danforth, but only by a majority vote. Their contestants were Hathorne and Gedney, who were as deeply implicated in the witch trials as they.

But the special court itself, we are told, was an illegal body, and this is, technically speaking, a correct statement. The new charter did not give the Governor and Council authority to appoint a special court to try criminal cases. That power was vested in the General Court which was to convene on the 8th of June. Why not postpone the organization of the courts till after the General Court had met. This would have been the regular, and hence the better proceeding. The preamble of the judges commission gives reasons, and reads thus: "Upon consideration that there are many criminal offenders now in custody, some whereof have lain long, and many inconveniences attending the thronging of the jails at this hot season of the year, there being no judicatories or courts yet established; ordered," &c. These reasons, though technically insufficient, may on the score of humanity, have had more weight on the minds of the Governor and Council, than they have on ours to-day. The 27th of May the hot season of the year! we must consider that the calendar has been changed, and that the 27th of May, old style, is the same as the 6th of June in our calendar. Shut up in close, inconvenient and crowded prisons, and conscious of their own innocence, the wretched prisoners doubtless clamored for a speedy trial; and it was charity to grant them this boon. The organization of the special court, and the appointees named in the commission, met with general approval. Not a

complaint was uttered, and not a breath of suspicion can be found in any contemporary writing against the character or personal integrity of any member of the court, and yet their course during the trials was severely criticised and condemned. The General Court acquiesced in the early action of the Governor and Council, and for nearly six months took no measures to organize a regular court of judicature. It hardly becomes us to lay too much stress on the irregularity pertaining to the organization of the special court, when there is so much to condemn in the blind and illegal proceedings at the trial. In this, again, the judges followed English precedents, the opinion of Sir Matthew Hale, and of English lawyers, rather than the advice of the leading clergymen of Boston and the vicinity. But time will not suffice to discuss this point.

My friend Mr. Upham, has said but little of the life and personal character of Giles Corey, while he has indulged in terms of eulogy which befit only a noble character. I have made no special study of Giles Corey's life, and hence the little I know of him is that common information which is open to you all. My impression is that, though an exemplary citizen and a church member in his latter days, he bore through life the reputation of anything but a saint. He had the misfortune to be continually in quarrels and disputes with his neighbors. He was a rash and impetuous man. He was once on trial for his life, for killing one of his farm laborers named Goodell; and though acquitted of that charge he was fined for cruelly beating the man. He was accused of stealing wood, of setting John Proctor's house on fire, and whatever mischief happened in the neighborhood it was thought safe to charge it upon Giles Corey. His rash nature may have brought him under suspicion when he was innocent. He sometimes turned upon his accusers, prosecuted them for slander, and recovered damages. On the whole he must have lived a disturbed and troubled life, and where there was so much smoke it is safe to conclude there was some fire. When the witchcraft troubles broke out he was eighty-one years of age. He believed in punishing witchcraft, attended the trials, and entered into the spirit of the prosecutions. When his wife was accused he hedged, and became himself involved. He was examined by the local magistrates, April 19, and committed to jail. At this examination he answered all questions, and manifested none of that resolute silence which five months later cost him his life. There was a rugged heroism in his manner of meeting death, which is picturesque; but it fails to inspire in me that respect which I feel for the calm faith and resignation of Martha Corey and Rebecca Nurse. I will not detain you further by incidents in his life, which must be familiar to you all.

Mr. S. C. BANCROFT, thought that what Mr. Poole had said gave a

different view of the character of Giles Corey, and made it appear that Mr. Upham's suggestion as to the motives which actuated him in refusing to plead could not be the true one. If Corey brought his misfortunes upon himself why should he deserve sympathy or respect? He believed that some had thought of erecting a monument to the memory of Giles Corey, but for his part he would not contribute to such a monument to one who had obstinately defied the laws. He was inclined to think that Corey died a fool's death.

Mr. UPHAM replied to this at some length, defending Corey as one possessing many good traits, although he had not intended to claim for him a perfect character in all respects. His eccentricities made him often during his life the object of slander, but no serious charge was brought against him which was not disproved. When he was accused of setting John Proctor's house on fire he was proved to be innocent beyond question, and was acquitted. The fact of his owning and carrying on successfully for more than fifty years, so large and valuable a farm as this, is greatly to his credit. But besides this his having been admitted to full membership in the old church at Salem when eighty years of age, and from that time at least, leading a wholly blameless and religious life, should relieve his character from the reproach of any former defects that may have existed. It seems very strange that here, in this enlightened age, and on the very spot where this victim of a terrible delusion had lived for so many years, the same calumnies that were made use of at the time by those in power, to shield themselves against the odium which even then attached to this cruel proceeding, should be again brought up to blacken his character. As to the monument to his memory, Mr. Upham said that he had not known that it had been proposed, but he was rejoiced to think that here on the very homestead of Giles Corey, the victim of the barbarism and superstitions of a past age, had arisen a most appropriate monument, the best that could be erected—a beautiful school house where the mind shall be educated, and an influence be spread abroad by which men shall be raised above the errors and delusions of ignorance, and freed from the darkness of superstitious beliefs.



WEDNESDAY, AUGUST 10, 1870.

A quarterly meeting was held at the rooms this day at 3 P. M.

The President in the chair. Records of preceding meeting read.

The proposed amendment to the Constitution, reported at the annual meeting, had its second reading.

Thomas Flint of Peabody, Francis H. Appleton of Peabody, and David Pingree of Salem, were elected Resident Members.

DEFICIENCIES IN THE LIBRARY.

It is intended, from time to time, to publish lists of deficiencies in the Library, hoping that the friends of the Institute who may notice the same, will be induced to aid in completing the sets. Any number or volume, not designated (within brackets) under any title, will be acceptable.

DEFICIENCIES IN DIRECTORIES.

[Continued from page 15.]

PROVIDENCE, by H. H. Brown [1838-9, 1841-2, 1844-5, 1847-8, 1850-1, 1852-3, 1853-4, 1855-6, 1856-7, 1857-8]; by Adams, Sampson & Co. [1861, 1862, 1863, 1865]; by Sampson, Davenport & Co. [1866, 1867]; by W. F. Bartlett [1859-60].

BRIDGEPORT, by Andrew Boyd [1865-6].

HARTFORD, by Melzar Gardner [1838, 1839, 1840, 1841]; by Y. N. Bolles [1842, 1844, 1845]; by Elihu Geer [1846, 1847, 1848, 1849, 1850, 1851, 1852-3, 1853-4, 1854-5, 1855-6, 1856-7, 1857-8, 1858-9, 1859-60, 1860-1, 1861-2, 1862-3, 1863-4, 1864-5, 1865-6, 1867-8].

NEW HAVEN, by James M. Patten [1845-6]; by J. H. Benham [1848-9, 1850-1, 1851-2, 1852-3, 1853-4, 1854-5, 1855-6, 1856-7, 1857-8, 1858-9, 1859-60, 1860-1, 1861-2, 1862-3, 1863-4, 1864-5, 1866-7, 1867-8, 1869-70].

NEW LONDON, by Starr & Co [1855-6].

NORWICH, by W. H. Boyd [1857, 1860]; by John W. Stedman [1865].

ALBANY, by Wm. Cummeier, Jr. [1829-30]; by Edmund B. Child [1832-3, 1833-4, 1834-5, 1835-6]; by L. G. Hoffman [1837-8, 1838-9, 1839-40, 1840-1, 1841-2, 1842-3, 1843-4, 1844-5, 1845-6, 1846-7, 1847-8, 1848-9, 1849-50, 1850-1]; by Hoffman & Munsell [1851-2]; by J. Munsell [1852-3, 1853-4, 1854, 1855, 1856]; by George Adams [1857, 1858, 1859, 1860, 1861, 1862, 1863].

AUBURN, by W. H. Boyd [1859-60].

BINGHAMPTON, by W. H. Boyd [1859-60]; by A. Boyd [1869-70].

BOONVILLE, by J. C. Kimball [1868].

BROOKLYN, by Henry L. Ogden [1839-40]; by H. R. & W. J. Hearne [1848-9, 1849-50, 1850-1, 1851-2, 1852-3]; by W. H. Smith [1854-5, 1855-6, 1856-7]; by Hope & Henderson [1856-7]; by J. Lain [1857-8, 1858-9, 1859-60, 1860-1, 1861-2, 1862-3, 1863-4]; by W. H. Boyd [1860].

BUFFALO, by L. P. Crary [1828, 1832, 1835, 1837, 1838]; by Faxon & Graves [1839, 1840, 1841]; by Horatio N. Walker [1842, 1844]; by Thomas S. Cutting [1848-9]; by Jewett, Thomas & Co. [1850-1, 1851-2, 1852, 1853, 1854]; by Thomas Lathrop [1855, 1856]; by E. R. Jewett [1857, 1858, 1859, 1860]; by R. Wheeler & Co. [1861]; by C. F. S. Thomas [1862, 1863, 1864, 1865, 1866, 1867, 1868].

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 2. SALEM, MASS., SEPTEMBER, 1870. No. 9.
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NOTES AND QUERIES ON SALEM HARBOR.

THE harbor of Salem, which has floated so many ships famous in commercial annals, is deserving of some notice. A comparison of some of the entrances to the deepest harbors on the Atlantic coast will show that our own occupies a prominent position in the facilities offered for navigation.

The following table exhibits the depth of water in the ship channels of various ports, only the deepest being given. The figures in the columns, in feet and inches, are the depths at mean low water and mean high water.

SALEM, MASS.

Northern Ship Channel, between Baker's and Misery Islands	52 — 61.2
Southern Ship Channel	28 — 37.2
Inside of Salem Neck	19 — 28.2

PORTLAND, MAINE.

From Cape Elizabeth to Portland Light	45 — 53.9
From Portland Light to Breakwater	36 — 44.9
From Breakwater to end of Munjoy Point	30 — 38.9
From Breakwater to Anchorage	16 — 24.9

PORTSMOUTH, N. H.

From Whale's Back to Fort Constitution	42 — 50.6
From Fort Constitution to Narrows	51 — 59.6

NEW YORK, N. Y.

Gedney's Channel	23 — 27.8
Swash Channel	17 — 21.8
Old South Channel	21 — 25.8
Main Ship Channel, passing Sandy Hook, to S. W. Spit Buoy	31 — 35.8
Main Ship Channel, after passing S. W. Spit Buoy on N. E.	
Course, one mile up the bay for New York	23 — 27.8

The depth of water inside of Winter Island, in Salem Harbor, is considerably greater than opposite the Neck.

Taking all things into consideration, such as protection from the force of the sea by Islands, the Northern shore, and Naugus Head; freedom from liability to change in the channels (the bottom being hard and the shores rocky, without shifting sands); accessibility from and to the open sea, and all the local advantages of the position, why is not Salem a desirable place for a naval as well as a military station? As such it was strongly recommended by Dr. Bentley more than half a century ago.

BOWDITCH'S LEDGE.

This ledge did not derive its name from Dr. Nathaniel Bowditch, as is generally supposed, but from his great-grandfather, William, born in 1663, died in 1728. He was the son of William who was Collector of the port of Salem under the Colonial government—born 1640, died 1681. The son William was a shipmaster and merchant. About the year 1700 he commanded the vessel called the Essex Galley, which struck upon this ledge, and hence the name Bowditch's Ledge. The Indian designation was *Tenapoo*, and as such it has been known to the pilots of our day.

A RELIC OF DR. BOWDITCH.

There is preserved in the Salem Custom House a Manifest of the cargo laden on board the Ship Putnam, whereof

Nathaniel Bowditch was master, from Sumatra and the Isle of France, dated December 27, 1803. The ship was of the burthen of two hundred and sixty-six and forty ninety-fifths tons; she was the only ship that Dr. Bowditch ever commanded, and this was his last voyage at sea. The Manifest is entirely in his own handwriting and is made out with his characteristic neatness and accuracy. It also bears the autograph of Col. William R. Lee, then the Collector.

An interesting incident is related of this voyage, in the Memoir of Dr. Bowditch, by his son, Nathaniel Ingersoll Bowditch, viz. :

"In his last voyage, Dr. Bowditch arrived off the coast in mid-winter, and in the height of a violent northeast snow-storm. He had been unable to get an observation for a day or two, and felt very anxious and uneasy at the dangerous situation of the vessel. At the close of the afternoon of December 25, he came on deck, and took the whole management of the ship into his own hands. Feeling very confident where the vessel was, he kept his eyes directed towards the light on Baker's Island, at the entrance of Salem harbor. Fortunately, in the interval between two gusts of wind, the fall of snow became less dense than before, and he thus obtained a glimpse of the light of which he was in search. It was seen by but one other person, and in the next instant all was again impenetrable darkness. Confirmed, however, in his previous convictions, he now kept on his course, entered the harbor, and finally anchored in safety. [Upon this occasion he had given his orders with the same decision and preciseness as if he saw all the objects around, and thus inspired the sailors with the confidence which he felt himself. One of them, who was twenty years older than his captain, exclaimed, 'Our old man goes ahead as if it was

noon-day !'] He immediately went on shore, and the owners were very much alarmed at his sudden appearance on such a tempestuous night, and at first could hardly be persuaded that he had not been wrecked. And cordial indeed was the welcome which he received from one who had been listening to the warfare of the elements with all the solicitude of a sailor's wife."

The Manifest is an interesting and valuable relic, and should be carefully preserved.

THE ISLANDS.

Baker's Island was so called as early as 1630, probably from one Baker, a ship-carpenter, as is supposed. This and the other islands were long covered with the primitive forests, and complaints were frequent that the woods suffered from depredators. In 1670 the town authorities issued the following order :

That " Francis Collinse haue liberty to fell twenty trees for to build his son, John Brown, a house, and himself a house, vpon Baker's Iland, and ther to take what he wanteth, and is apoynted to take care, that not any cutt timber or wood without leave of Selectmen."

In 1673 a committee was empowered to have wood, illegally cut down there and on Moulton's Misery, brought away, and to use suitable means to prevent similar offences.

Baker's Island was leased to John Turner, and the Miseries to George Curwen, in 1678, for a thousand years and a day. In 1731 a son of the first lessee purchased the fee of Salem in the premises thus let to him. The price paid for Baker's Island was one hundred and thirty pounds, in bills of credit, at eighteen shillings and sixpence for an ounce of silver. A like sum was paid for Misery Islands. In 1783 Baker's Island was described

as of the best soil for grass ; great quantities of superior butter and cheese had been made there from the milk produced on its fodder ; always had a supply of fresh water, and was "never known to be infested with flies, musketoës, or other insects to disturb" the cattle. The Light Houses were erected in 1797, and the lights first shown January 3, 1798.

The following article by Dr. Bentley, which was published in the Essex Register of August 9, 1817, is of interest in this connection : —

"Our Islands are not in the high cultivation they readily admit, and are the only part of our soil which is deprived of its former reputation. They are not so extensive as the Boston Islands, but they are recovering the share of favor they have lost.

The excellent crop of grass this year, on Cat Island, has rewarded the labor of our neighbors from Marblehead, who gathered it.

The provident keeper of the Light House on Baker's Island has restored a garden to that spot, and has renewed some of the labors which rendered that island delightful, while it was the property of Col. Turner and his heirs, above a century.

The Moulton Misery Isles had as early attention, and were an object to the family of Capt. Curwen, the greatest merchant of Salem. The House, which was demolished during the war of the Revolution, has not yet been restored, but the Islands promise to reward the diligence of any worthy inhabitant and cultivator.

The romantic scenery of Eagle Island remains the same, losing only its trees.

Coney Island was purchased by the family of Sewall, not long after the former purchases we have mentioned, and has yielded its harvests in our own time, and been

memorable for its festive scenes, and will again invite the same guests who once blessed it.

Within the Islands, upon Beverly shore, and above West Beach, is the farm long possessed by the venerable Barnard, of Marblehead, whose praise is in all our churches. Along the shores are to be seen the houses raised on the same favorite spots which were chosen by the first planters of Salem, and near the central settlements of Beverly, opposite to the bar from Salem Neck, once the landing of the first ferry, is to be seen the place of the palisadoes which were in the rear of Fort Derby, of which the front is on the sea."

Cat Island (now Lowell Island) was granted, in 1655, by the General Court, to Gov. Endicott and his heirs. Its proper designation was Cotta, probably from an early inhabitant of that name, Robert Cotta, but it is also called in some documents Catta, subsequently contracted by the popular phrase to Cat. It was bequeathed in 1684, by Zerubbabel Endicott, to his daughters, under the name of Cotta. The grant to the Governor was as follows:—

"1655 — May 23. At the request of our present honoured Gouvernor, John Endecott, Esquire, the iland called Catta Island, being about two acors, lying neere to Marble Head, shall & hereby is graunted to him & his heires foreuer, provided it be not giuen to any towne or person already."

The Misery Islands were early called Moulton's Misery, from a disastrous shipwreck there. They appear under that name in 1658-9, and probably earlier.

House Island was so called from a rock on it resembling a building.

In 1660, May 31, the General Court Record reads:

"In answer to ye petition of ye selectmen of Salem,

humbly crauing the favor of this Court to graunt them the propriety of the ilands called the Miserjes and Baker's Island, the Court judgeth it not meete to graunt their request."

On the 16th of October, of the same year, 1660, however, the Court acceded as follows:—

"Vpon a motion made in the behalfe of the inhabitants of Salem, this Court judgeth it meete to graunt to them certaine islands knowne by the name of the Miserjes & Baker's Island, lying in the mouth of their harbor; provided, that it shall be lawful for any fishermen to make vse of them in making of fish, & whateuer conduceth thereto, as building houses, stages, &c., as also wood & flaking in all fishing seasons."

The subsequent proprietorship can be easily traced from the public records.

THE NAMES

of ledges, shoals and rocks present a curious theme for study and inquiry. Who, for instance, can state the origin and significance of the terms Satan, Pope's Head, the Brimbles, the Endeavors, the Triangles, Kettle Bottom, Great and Little Haste, Great and Little Aqua Vitæ, Cutthroat Ledge, House Ledge, Pilgrim Ledge, and numerous rocks that might be mentioned?

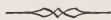
The Haste was called Johnson's Haste before 1697, and probably from one John Johnson of Salem, who, in 1693, prays redress for what he considered oppressive Custom House charges, the said petitioner "having for nigh three years followed the trade of boating goods" to and from Boston.

Rising States Ledge was probably so called from a vessel of that name touching upon it, but can any of our old commercial men tell when and under what circumstances?

In the latter part of the last century, and early in the present there was a ship *Rising States*, still remembered by some among us, and the name of the ledge may be in some way connected with an incident in her history. There was also a brig of the same name. The ledge was so called previous to 1806, for Dr. Bowditch thus records it in his chart of the harbor, published in that year.

There is a rock now called Gray's rock, but it was formerly styled the Gray rock, and Satan was called the Black rock, as if to designate the color.

Might not many interesting events in our commercial annals be revealed by endeavoring to trace out the origin of these terms? Some of them undoubtedly date back to the earliest settlement of Salem, and have as memorable a significance as those of Thacher's Island, Avery's Rock, and Norman's Woe—the first two recorded in Mather's *Magnalia*, and the last immortalized in Longfellow's *Wreck of the Hesperus*.



EXCURSION TO PLYMOUTH, THURSDAY, SEPTEMBER 1, 1870.

THE members of the Institute and their friends, numbering about seven hundred, spent a most delightful day on an excursion to Plymouth in the steamer "*Escort*," which was chartered for the occasion. The smoothness of sea, the brightness of sunshine and comfort of temperature were all that could be desired. A more auspicious day could not have been selected. The boat left Phillips wharf, Salem, at 8.30 A. M., and after skirting along the shores of Marblehead and Swampscot struck across the bay in a direct line to Minot's Ledge off Cohasset. The breakers were dashing around the lighthouse and the white foam was discernible for a considerable distance. This lighthouse is a firm, substantial, and massive work, and is not likely to experience the fate of its predecessor, which was destroyed in the great gale of April 16, 1851, with its inmates. The people at the light waved their handkerchiefs in recognition of the excursion party, the steamboat blew its whistle, and the fog bell at the light-

house was struck several times in response. This, with music from the band, constituted the interchange of courtesies usual on such occasions, and the event was, on the whole, one of considerable interest.

From Minot's Ledge to Plymouth the boat kept near the shore, thus affording an opportunity to observe its peculiarities as contrasted with the North Shore. South of Cohasset, few rocks or ledges were to be seen. Steep sandy bluffs rose to the view with much frequency. The straggling houses which dotted the hills and slopes, and the villages which occasionally came into view, were objects of interest and elicited frequent inquiry as to the names of the different towns, which are, — Cohasset, Scituate, Marshfield, Duxbury, Kingston, and Plymouth. Duxbury is due west of Provincetown; the extremity of Cape Cod and that town, with Kingston and Plymouth, form the western shore of Cape Cod Bay. These towns cover considerable territory, and generally have more than one village. Thus there are Cohasset and North Cohasset, Scituate and North Scituate, North Marshfield, East Marshfield and South Marshfield, Duxbury and West Duxbury, etc. The old lighthouse at Scituate was an object of some interest, having a very primitive look, while Marshfield attracted special attention as having been the home of Webster whom Massachusetts loved to honor.

The harbor of Plymouth is shallow, and good pilotage seems essential. The pilot boats appear to be numerous, and the captain secured the services of a pilot from one of them; and the steamer, in making her way slowly in, once grounded, even with this precaution. She entered by a winding and circuitous course, running close to a long, low sand bar, which extends a mile apparently, into the bay and across the mouth of the harbor, and upon which the attempt has been made to construct a long line of breakwater, which still stands with varying degrees of permanency. Rounding the headland at the north of the harbor, which contains the Gurnet lighthouse, the excursionists had a view of Clark's Island, where the Pilgrims spent their first Sunday, and of Captain's Hill, where Captain Miles Standish lived and died, and where, it is said, vestiges of his house, and the well dug upon the premises, still remain.

At 2 P. M. the boat reached her destination; the company was met at the landing by a committee of the selectmen, who conducted them to Plymouth Rock, where a cordial welcome was tendered by the chairman, ALBERT MASON, Esq., as follows:—

FRIENDS OF THE ESSEX INSTITUTE:—I am happy in behalf of the oldest town in New England, to extend her greeting to so distinguished a company, from her next oldest sister.

Two hundred and fifty years ago, Samoset, with the little English

which he had learned from fishermen, made, near the spot where we now stand, the most impressive reception speech which history preserves. While I trust the Pilgrims before me have not that fear of hostile intent from the natives, which gave to the auditors of Samoset such peculiar interest in his words of welcome, I should esteem myself especially fortunate to have learned enough of the language in which antiquarians think, to be able to give to you the timely aid in the purpose of your pilgrimage that his brief words gave to them in the sublime object of theirs.

As Samoset had need to employ Squanto, who had learned English in England, to communicate fully his kindly purposes, so to interpret in detail all the ancient relics of historic interest which we wish to show you, I shall need to call to my aid the society which has acquired a readier speech by studies in the same school with yourselves and I know the resident members of the Pilgrim Society will assume this office with great pleasure. It will suffice for me to give the general words of welcome which shall assure you that Plymouth is right glad to see you; that she has not forgotten the intimate blending of her early history with that of Salem. Indeed so close were the relations of the two colonies that history has somewhat confounded the record of the two, and has not unusually given to Plymouth the honor which belongs to Salem, of being the first home of the Puritans in New England, and — pardon me for the reminder — has yet more commonly charged upon us the particular shortcomings of those excellent men in which the Independents of Plymouth did not share.

Salem and Plymouth are no longer in their youth, and many changes have been wrought in each since Roger Williams, the beloved assistant pastor of the church at Salem, first preached *absolute* freedom of conscience, and defined the dividing line of jurisdiction between church and state so clearly, that he had need to make Plymouth an asylum for two years. Both towns are now what the Boston *Advertiser* says “seem like stray locks of gray hair upon the forehead of the nation;” but I say for the older of the two, what I doubt not the younger will endorse, that the nation itself is yet young, and her oldest towns are yet in the prime of life, with so much yet to achieve that two hundred and fifty years are but a preparatory course to what is before them. The visit of to-day may be gathered from your records by some industrious historian of centuries hence, and serve an important purpose in perpetuating the intimacy that should ever be cherished between the oldest towns of New England.

We thank you for this call, and regret that you cannot prolong it.

I am requested, in behalf of the Pilgrim Society, to invite you to visit Pilgrim Hall and spend as much time with the relics there as you may be able. The Rock is here; Cole's Hill is before you; Burial Hill just

beyond. Our town is open to your study; its every hill and every valley, every pond and every stream has a story that carries the mind back to the time when your fathers and ours were drawn to each other by common perils and common hopes. May not the memory of those perils and the realization of those hopes bring Salem and Plymouth together as pleasantly to-day?

As the family of our fathers' friends we bid you again a most hearty welcome.

Dr. HENRY WHEATLAND, President of the Essex Institute, replied as follows:—

MR. CHAIRMAN:—In behalf of the members and friends of the Essex Institute, I tender their sincere thanks for your cordial reception this day, and for the opportunity to examine the interesting memorials of this ancient town, the early home of the Pilgrims. It is appropriate that the descendants of the companions of Roger Conant, who formed the first permanent settlement on the North Shore of Massachusetts Bay in 1626; of Governor Endicott and his associates, who landed in 1628; of Rev. Francis Higginson and his friends, in 1629, and who organized the first church in the colony, should make a pilgrimage to this sacred spot, and revive the incidents of that early period in our history. A few months since I received a letter from a former resident of Salem, now residing near Lincoln, England, giving a very interesting account of two visits to Scrooby, the first in 1849, the second in 1869; he described the old manor house, and narrated many interesting reminiscences of William Bradford and his friends in the organization of the pilgrim church, which, after a removal to Leyden for a few years, came to America in 1620, and landed on this spot.

The Essex Institute was formed in 1848 by the union of the Essex Historical and the Essex County Natural History Societies, the former organized in 1821, the latter in 1833. Objects, to collect and preserve materials to elucidate the civil and natural history of the County of Essex, and for the promotion of art, literature and the sciences. A leading feature is the plan of holding field meetings, which were first instituted in 1849, and have since been annually held with the exception of some two or three years—usually about five each season in the several towns in the county. Four have been held beyond the limits. This slight sketch may perhaps be desirable to inform you of our objects and aims. I trust that we may ere long have the pleasure of receiving a visit from the Pilgrim Society and the citizens of this town, and again thank you for this reception.

Dr. Wheatland introduced Dr. GEORGE B. LORING, who spoke as follows :—

LADIES AND GENTLEMEN :— I cannot assume the honorable position which the President of our Institution has assigned me, without calling to your minds the associations which gather around a visit of the historical explorers of Essex County, to the renowned locality where the Puritans planted their genius on this continent, after vain, and I think, heaven-thwarted endeavors to plant it elsewhere. We are reminded of the early relations which existed between the great men of Essex and Plymouth. When, in compliance with a promise to Roger Conant, who, as early as 1626, was found nursing the infant Massachusetts Colony on the headlands of Cape Ann, and who, with his companions, has been called “the sentinels of Puritanism on the Bay of Massachusetts,” John Endicott, a “Puritan of the sternest mould,” embarked in the *Abigail*, for the settlement of Naumkeag, Plymouth was his guiding star, and the God of the Puritan was his “stay and staff” through all his trial. Disease attacked these first settlers of Salem, and “being destitute of a physician, Dr. Fuller of Plymouth went to their relief; and in the interview with Mr. Endicott, the religious views of the Pilgrim were discussed, which led to a correspondence between Mr. Endicott and Governor Bradford, then personally strangers, and a friendship commenced which lasted till death.” Then it was that the Woodburys, and Balches, and Palfreys of Essex County learned the earnestness and fidelity and power of the Carvers, and Brewsters, and Winslows, and Aldens, and Standishes of Plymouth; and now we, in whose veins the blood of both colonies has commingled, are here to view the sacred relics and tread the sacred soil of our ancestors. The same sun which lighted their watery pathway, has shone for us on our journey hither; upon the bosom of these waters their humble shallops floated; the soft land breezes cheer, and the fierce gales vex the voyager, as they did when the *Mayflower* and the *Abigail* bore their precious freights; here is the same “stern and rock bound coast;” here are the islands and the low line of shore, and here, let us piously and gratefully believe, is the same defiant spirit, the same earnest faith, the same trust in God and humanity, which gave the Puritan immortal force, and which have stood as firm against all attacks, as have these promontories against the assaults of the raging seas.

I have no time here to discuss the genius, or recite the history of the Puritans of Plymouth and Naumkeag; but, while as a citizen of Essex County I can congratulate the men of Plymouth that upon their name, and not upon ours, has the mantle of immortality fallen, I congratulate the world that the Puritan spirit of our common ances-

try still endures, and holds triumphant sway over the social and civil institutions of our land. We admire the spirit of adventure which settled the other American colonies; but we bow before the stern resolve which settled Plymouth. We may envy the "calm and monotonous ease" which Wouter Van Twiller secured for the Dutch colonists of New York; we may repose for a time in the liberal indifference which opened the mouth of the Hudson to the flying Swedes, and Walloons, and Waldenses, and Huguenots, and English, and Hollanders, and converted the harbor of New York into a refuge and not a nationality; we may study with interest the jealousy and suspicion which created for the Dutch colonies a dislocated unity, and perhaps sowed the seed, from which a noxious crop of reservations and distractions has sprung up in our country; but we admire and believe in that faith in God and a good government, which inspired the Puritan to establish a popular civil system upon a substantial foundation, and gave us in reality "a church without a bishop, and a State without a king." Morally and physically the Puritan grew strong, and it has been well said of the early colonial period of New York that "it served but indifferently to prepare the (Dutch) colonists for their impending contentions, with men whose frames and spirits had been braced by the discipline of those severe trials that befell the first planters of New England."

Compared also with the various other American colonies, how vital and enduring Plymouth appears! Of their settlements hardly anything remains which would call forth a pilgrimage; of their governments no valuable principle has been handed down to us; of their religious fervor and devotion, we have no record to command our admiration or reverence. Not to Jamestown, not to New York, not to the Carolinas, do men turn their steps in adoration. Not in this day can the long repose of the Hollander be broken, and men be taught that New Amsterdam is a rival of Plymouth in historic greatness, significance and renown. History provides its most brilliant pages to those events which operate as causes, not to those which follow as a consequence. And so in the annals of popular representative government, the compact made on board the Mayflower outshines the Union of the Dutch colonies, and the blows struck at Concord and Bunker Hill, amid trial and disaster, have a significance unknown to the successful endeavor at Saratoga, which owes its name and its fame to the fact that the Puritan of Massachusetts would not submit to oppression and wrong.

While the Puritan believed in civil freedom and individual rights, he also believed in a definite form of religion and government, to aid man in resisting temptation and developing his moral nature, and to aid him also in discharging his civil service wisely and faithfully. In-

fidelity and anarchy had no charms for him. The solemnity and fervor with which he started forth in his career, impatient alike of the restraints of England, and of the sluggish materialism of Holland, have never been equalled either in peace or in war. Casting aside the temptations of mercantile adventure, he called his poverty-stricken band about him, and set forth upon an enterprise whose value can never be measured. The "tender last farewell" of John Robinson, filled with a spirit of inquiry and liberality, and warm with religious faith, inspired at once the thought and sentiment of advancing Christianity. "We are now, ere long," he said, "to part asunder; and the Lord only knoweth whether ever I shall live to see your faces again. But, whether the Lord hath appointed this or not, I charge you, before God and his blessed angels, to follow me no further than I have followed Christ: and if God shall reveal anything to you by any other instrument of his, be as ready to receive it as ever you were to receive any truth by my ministry: and I am confident that the Lord hath more light and truth yet to break forth out of his Holy Word.

* * * Remember, also, your church covenant, especially that part of it whereby you promise and covenant with God and one another, to receive whatsoever light and truth shall be made known to you from his written word. But take heed what you receive for truth, and examine, compare, and weigh it well with the Scriptures." This was the Puritan's religion, his inheritance from a long line of protesting ancestors, his support, too, in those hours of trial which attended the severe and solemn service to which he was born.

The Puritan's civil organization was founded upon the same elements as his religious—loyalty, faith, self-reliance and the largest freedom. The compact made on board the Mayflower, the result of social and civil necessities which had not been provided for by that government which they had left, but which they still recognized as their own, is remarkable above all things in this—that it was entirely adapted to the occasion, and laid the foundation of the government on the consent of the governed. The hard experience of the Puritans under oppressive and arbitrary rule, had taught them the value of that civil system which springs from the wisdom of those who constitute society and the state, and which turns for its support to the loyal hearts and moral energies of those who made it. How inferior to this great principle is any mere machinery of power—any mere superstructure, which is exposed to the storms of popular passion, and can only supply a temporary necessity. Theories of finance, and of the relations of the states to the general government, and of taxation, and of charity and education, may change, but for popular government, the theory and practice of the Puritans cannot change. And the instinct of mankind, in all great popular endeavors, turns to

this spot for an example of those great virtues which can alone give stability to the state, and which are as immortal as human aspirations, and man's highest desires.

No wonder that the American mind has erected here one of its great temples of worship. The high purpose and the immortal thought of the Puritan have imparted to our nationality a greatness, which shall endure through all decay and change, as the inspiration of the prophets and wise men of old has outlived the temples and groves which echoed to their divine words. The great American poem was written here — the great American anthem was sung on these shores. The spiritual sublimity which hovers over this spot — what has it not done to give the American name glory and honor and power in all the realm of thought; what has it not done to give mankind new courage in all heroic effort. Let us then with large and liberal hearts thank God for this great inheritance, and find here that divine light, which, streaming across our land, warms and irradiates, and vitalizes all names and events that are dear to the American people. Let then Plymouth stand as she has always stood, the central figure around which the nobility of our land may cluster. Not as rivals, but as companions, let the sister colonies be called into her presence; and her glory shall be theirs also. And let us remember that history has assigned the Puritan his position, from which he cannot be dethroned; and that the annals of America and the world could better spare any other colony than that planted at Plymouth.

THE HON. THOMAS RUSSELL of Boston was introduced as Judge Russell, and came forward and said, he would rather be introduced as Mr. Russell of Plymouth. He then made some brief and very appropriate allusions to the localities of historical interest and closed his remarks in extending an invitation to all to accompany him on a tour of inspection; the limited time before the departure of the boat only permitting a cursory view.

At Plymouth Rock near the landing, a handsome granite monument is nearly completed; a portion of the rock was removed some years since; placed in the area in front of Pilgrim Hall, and enclosed within an iron fence, on which are inscribed the names of the signers of the compact on board of the Mayflower, Nov. 21, 1620.

Cole's Hill is near by, where fifty-one of the Pilgrims who died the first winter were buried, and where the ground was sowed with grain, that the Indians might not know the number of their dead. A short distance beyond is Burying Hill, originally called Fort Hill (the first defensive structure having been erected on its summit), an eminence rising one hundred and sixty-five feet above the sea, which commands

an extensive view embracing the harbor and the shores of the bay for miles around; the visitor cannot fail to recall the time when the Mayflower sailed into the harbor, laden with men, women and children, the founders of a mighty empire, and reflect upon the great changes that have occurred during the lapse of two and one-half centuries. The whole extent of this hill is covered with the symbols of mortality — the sepulchres of these venerated fathers. The oldest stone marks the grave of Edward Gray, and bears the date of 1681. The remains of Gov. Bradford and many of his descendants here repose. The Court House contains many old documents and papers of great value and interest.

Pilgrim Hall, a monumental structure of rough granite, has many old relics, a library and some paintings. On entering the Hall, the painting of the "Landing of the Pilgrims," presented by Henry Sargent, Esq., of Boston, attracts attention; size, thirteen by sixteen feet. All the prominent characters in the colony, are represented in the costume of their time, with the friendly Indian, Samoset, in the foreground. There are also portraits of Edward Winslow, Josiah Winslow, Gen. John Winslow, Major General Benjamin Lincoln, Hon. John Trumbull and others. Among the antiquities are noticeable: a chair which belonged to Gov. Carver; the sword, pewter dish, and iron pot that once belonged to Miles Standish; the gun-barrel with which King Philip was killed; deeds bearing the signatures of Miles Standish, Josiah Winslow, Peregrine White, John Alden, and many others of the old notables; chairs belonging to Elder Brewster and Gov. William Bradford; the "Fuller Cradle," besides many other curious and interesting relics.

This bird's eye view has awakened a desire to revisit these interesting localities when sufficient time will permit a more extended examination.

The Hon. Jacob H. Loud, Collector Russell, Albert Mason, Esq., Charles C. Doten, Esq., and other prominent citizens, were active in rendering this visit agreeable and profitable. To these gentlemen the Institute hereby tenders its sincere thanks. Promptly at the appointed hour the party reëmbarked for home, and the "Escort" again steamed towards Salem, and at 8 P. M. reached Phillips' wharf, the sail as pleasant and enjoyable as the outward trip had been.

BULLETIN

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OLD CHANNELS OF TRADE.

FROM A PAPER READ BEFORE THE ESSEX INSTITUTE FEB. 4, 1867,

BY ROBERT S. RANTOUL.

POLITICAL Economy tells us that cost of transportation is as legitimate an element of value, as is labor expended in the production of merchandise, or fixed capital invested. Facilities for transportation, therefore, affect directly and sensibly the cost of all that we use and the value of all that we have. Thus the coal of Pennsylvania has but little worth to the limited population near enough to reach it without public facilities for transportation, while a very large fraction of what we pay for the fuel in our grates is paid to the carriers of this exhaustless treasure. In 1817 coal could be had at Pittsburg at six cents per bushel. Again, wheat is worth about one dollar and a half per bushel or fifty dollars per ton. To move a ton of it on common roads costs fifteen cents per mile. Three hundred and thirty miles of transportation, then, will cost as much as the wheat will sell for. But transportation by rail is computed at one and one-half cents per ton, and now wheat may be moved thirty-three

hundred miles before the freight equals its marketable value. Thus the economic limit of transportation is extended tenfold by the application of steam power, and Chicago becomes great, while without this means of garnering in the golden harvests of the prairie, she might be an Indian trading post and little more.

Water has been, in modern times, the great carrier of products. To the interchange of products by water, the term "commerce" has been applied, almost exclusively. For commerce, thus understood, high claims have been advanced. Commerce has been held to be the civilizer of the world. Hovering on her white wings from sea to sea, she has been likened to the dove of Peace. She has been called, too, the dispenser of the world's wealth—the arbiter of the destiny of princes. Let us examine these claims for a moment.

Nothing contributes so much toward keeping alive the unholy fires of prejudice, alienation and hate as geographical separations among men. Bring human beings together and they at once perceive—and that, too, by instinct and without persuasion—that their fellows are more like themselves and less ill-disposed than they had fancied them to be. Thus commerce, being the great carrier of persons, has been the great pacificator, and reconciler,—and, among human agencies, the master-educator and civilizer of mankind. But commerce has also been the dispenser of wealth.

The East has been the historic, as it has been the fabled source of the world's riches. Pactolus of the ancient poet enriches, with its golden sands, the India of the modern statesman, and the glowing "wealth of Ormus and of Ind" are not more the revel of Milton's fancy than the record of the Rothschilds' ledger. To this result circumstances of soil and climate conspire with an ancient

civilization, a unique social condition and a population so redundant as to make labor almost without value, and life without a higher aspiration than to live.

It has long been a favorite theory with political speculators that the nation which, for the time being, controls the trade of the East, practically controls the world. Sir Walter Raleigh reduced this principle to a formula, thus : "Whosoever commands the sea, commands the trade of the world,—whosoever commands the trade of the world commands the riches of the world, and consequently the world itself." "He who possesses Constantinople governs the world," said Napoleon I. This theory that the carrying trade of the East is the key of modern empire, has had the countenance of Dr. Robertson and other English writers to some extent, and has guided many of the conspicuous acts of the Bonaparte family in France. This was the star that lured the first Napoleon into Egypt, and it has so far influenced the career of Napoleon III., that a moment will not be misspent in considering the form assumed by the theory in the mind of that Emperor.

It will be remembered that Charles Louis Napoleon Bonaparte, before his election to the Revolutionary assembly of 1848, and his later election as President of the Republic, had made two several armed attempts upon the throne of France, each one of them as ill-advised as John Brown's raid into Virginia, though I never heard that the wily Frenchman was esteemed a madman on account of them. The first of these took place at Strasbourg, Oct. 30, 1825. And instead of dealing vigorously with it, the king, not feeling very firm upon his throne, and anxious to conciliate the enthusiasm which the name of the adventurer still roused throughout France, for he was about to bring back from St. Helena, with pomp, to Paris, the ashes of the mighty founder of that name, excused in

part the foolhardy adventure of the nephew, and sent him, in an armed vessel, to America. In May, 1838, the banished Bonaparte left this country for England, but not before thoroughly acquainting himself with the geography and civil polity of the States of America. At Boulogne, Aug. 6, 1840, he made his second attempt to seize the throne, having embarked by steamer from England with a written proclamation, a few followers, and a tame eagle, which was to typify the French Empire in this feeble melodrama. For this act he was incarcerated for life in the castle at Ham, from which he escaped in disguise six years later.

It will be seen, then, that the destined Emperor of the French enjoyed, between 1840 and 1846, six years of leisure in which to ponder upon his future,—his preconceived ideas of policy and war, and the knowledge he had obtained of the Western Continent. During this period he was in constant receipt of communications calling his attention to the brilliant future of the Central American States, and urging him, upon effecting his escape, to undertake the prosecution of public works, for connecting, by a ship channel at this point, the Pacific ocean with the Caribbean Sea. Immediately upon his flight from Ham in 1846, he put forth over the letters "L. N. B.," a pamphlet now included in his published works,—in which he shows that certain countries, "situated," as he says, "on the high-road of commerce, are destined, from their geographical position, to a high prosperity." He cites, for examples, Tyre, Carthage, Constantinople, Venice, Liverpool and London, as exhibiting "the astonishing spectacle of powerful states, springing suddenly from unwholesome swamps." Constantinople he describes as "the central point between Europe, Asia and Africa,—situated between two seas where she might have

fleets and dominion," and adds, "this is what the city of Constantine might be, but is not, because, as Montesquieu says, God permitted the Turks to exist, possessing uselessly a great empire."

Napoleon III. then develops the correlative proposition, as follows :

"A State exists in the new world as admirably situated as Constantinople, and as uselessly occupied—Nicaragua. As Constantinople is the centre of the old world, so is the town of Leon of the new ; and if the tongue of land which separates the two lakes from the Pacific were cut through, she would command, by her central position, the entire coast of North and South America.

"Here is the shortest route for the United States to China and the East Indies, and for England and Europe to New Holland and the South Pacific. * * * * *

England will see with pleasure Central America become a flourishing and powerful State, which will establish a balance of power by creating in Spanish America enterprise powerful enough to prevent, by backing Mexico, any further encroachment from the North."

As late as 1858, and probably up to the time when the French designs upon Mexico began to unfold themselves, the Imperial mind still clung to the project of a Nicaragua Canal, to bear the name of Napoleon, and to be commanded at its mouth by French ships of war. Political as well as physical facts seem to have set their fiat against the fruition of his dream, and the adventurer turned his attention, after the failure of his Mexican and Central American designs, to the completion of the Suez Canal, by which he hoped to bring the largest Indiamen into the Mediterranean through the Gulf of Aden and the Red Sea. Should this plan succeed, and it has, I believe, the endorsement of the elder Stephenson and every pros-

pect in its favor, the wealth of the Indies may resume its ancient channel for a time, and Napoleon III. may yet live to see a share of the commerce of the East restored, by the successor of Charlemagne, to the Latin countries of Southern Europe.

Commerce among the ancients was a wholly different thing from the commerce of the modern world. It was confined mainly to the shores of the Mediterranean and rarely ventured beyond the pillars of Hercules. To the ports and cities of these shores it drew, to some extent, the wealth of the interior. To how limited an extent will be obvious, when we reflect that road-ways for transportation by carriages were unknown except in the immediate environs of the great cities,—and that the products of the country were brought for export to the sea, and the products of exchange returned, on the backs of camels, asses, oxen and men. Just so in Arabia to-day is brought out from the back country to Mocha that delicious coffee with which our townsman, Capt. Bertram, regales so many of the breakfast tables of the Union.

Of course, under such a system, only articles of small bulk and great value can be advantageously transported. The staples of modern commerce were then unheard of. Neither cotton, tobacco, sugar, coal, nor iron, were then subjects of freight, and breadstuffs only in limited and intermittent quantities. Trade was made tributary to the luxuries rather than the comforts of life, and gold, ivory, spices, marble for building and the arts, gums, jewels, silks and ornamental woods outranked in consequence the staple commodities. Thus Tyre, Carthage, Athens, Corinth, Coreyra, Byzantium and Rhodes grew great in turn upon the overland traffic of Asia and Africa which they carried across Europe, even at last so far as to barter for

the furs of Scandinavia and the tin of Britain. Thus Alexandria, planted by the Conqueror at the mouth of the Nile, controlled, under the Ptolemies, the trade of Africa. Thus Babylon under Alexander, and Palmyra under Solomon, both inland cities, but planted in the highway of Asiatic commerce, rose to the chief place among nations and again declined under the enervating influences of wealth and conquest.

The causes of commercial greatness operative among the ancients, continued to operate during the middle ages, and produced, in turn, the Italian Republics. Venice, Genoa, Florence, Pisa, held the carrying trade of the East, until the end of the fifteenth century, at which period they had introduced Public Banking, — Book-keeping by double entry, — Bills of Exchange, and a system of Funded Debt, — and the coins of Venice circulated from Iceland to Cathay. Two momentous events signalized the close of the fifteenth century. Spain had found her way to America in search of a new path to India, — Portugal had found a new path to India by doubling the African Cape. From this date the Mediterranean ports sunk in importance, and the vigorous peoples of northern Europe grasped their share of Eastern traffic, by following the Portuguese pioneers around the Cape of Good Hope. During the sixteenth and seventeen centuries the Dutch were carriers for the rest of Europe, and the English superseded them in the eighteenth. And now the ambitious formula of Sir Walter Raleigh was by no means forgotten. In 1787 Sir John Dalrymple, uneasy that Spain should hold, — still more uneasy lest the United States might thereafter hold — the Isthmus of Darien, wrote thus on the subject in a work whose significant motto was :

*Regique hoc dicite vestro, —
Non illi imperium pelagi !*

a prototype, it would seem, of that familiar refrain to which, at last, Americans can listen with composure :

Rule, Britannia ! Rule the waves !
Britons never will be slaves.

The Englishman writes as follows :

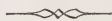
"But if neither Britain singly, nor the maritime ports of Europe jointly, will treat with Spain for a passage across Darien, it requires no great gift of prophecy to foresee, that the period is not far distant when, in order to procure the precious metals at once, the States of America will seize upon that pass with ease, wresting it from the feeble violence of Spain. * * * * * Their next move will be to take possession of the Sandwich Islands, discovered by the immortal Cook.

"Stationed thus in the middle and on the east and west sides of the new western world the English-Americans will form not only the most potent but the most singular empire that has ever appeared ; because it will consist in the dominion not of a part of the globe but of the whole ocean. For, on the one side of the new continent, from the Sandwich Islands, they may, by turning a little to the south, run on the trade wind to the East Indies, or, by turning less than twenty degrees north, run on the great west wind, which blows here ten months out of the twelve every year, to the coast of Mexico, by which the gold of the East and the silver of the West will be within their reach.

"From Darien they will sail to China ; from China to India ; from India to Chile, and from Chile by the south land wind, which never varies, to Darien ; that is, they will make the tour of the Indian and Southern seas, everywhere collecting wealth by trade, in a little more time than it takes for the voyage from London to Venice.

* * * On both sides of the continent, during the wars of Europe, they will enjoy as neutrals the carrying trade from Europe to the one side, and from India to the other side of the new world; even in peace they may engross the India trade." * * * Without recourse to that violence which Sir John Dalrymple so much apprehended, the dreaded Americans will soon have accomplished all that he foresaw. We now enjoy the free passage of the Isthmus of Darien by rail, and silks from China as well as the precious metals of Australia and California have come that way. Recently a treaty has been concluded securing to us the long coveted ship-canal through the Isthmus of Darien. We already reap the benefit of commercial treaties with China and Japan,—of friendly relations with Mexico and Spanish America, and of growing intercourse with all these states in every department of exchange and trade. Protections were issued at this port, some years ago, to several Essex County fishermen, who were on their way to the Sea of Japan, to establish there with schooners to be built at San Francisco, that nursery of wealth and enterprise which has contributed untold millions to our material prosperity,—the New England Fisheries. Steam whalers from New England ports are ploughing the icy currents of the North Pacific. By the timely acquisition of the Russian Possessions in America, we have done much to protect ourselves against the jealousy which the possession of so extraordinary a naval station as the Bay of San Francisco, and the completion of a railroad across the continent will soon excite. Steam mail communication is already established upon the Pacific, and we hardly anticipate events in declaring that the East India Trade, as known to the Derbys and to the Marine Society—that mighty impulse which built up the cities of Hol-

land and England and America, and Salem among the number, is dead, and that the products of the East will hereafter find their way to Europe and America, not by the Cape of Good Hope, but through other channels.



REGULAR MEETING, MONDAY, SEPTEMBER 5, 1870.

THE President in the chair. Records of preceding meeting read.

After adopting a plan of arrangements for the annual Horticultural Exhibition, and the transaction of some other business, the President announced the death of our Ex-President, the HON. ASAHEL HUNTINGTON, of Salem, which occurred at his sea-side residence in Beverly, this forenoon, after a brief illness.

Mr. H. was the second son of the Rev. Asahel Huntington, the much respected pastor, for many years, of the church in Topsfield; in that town the subject of our notice was born, July 23, 1798. He was descended from the old Puritan stock which settled in Connecticut in the early period of our history, both on the paternal and the maternal side. His father was born in Franklin, Conn., where the family resided for several generations and tilled the same acres, and took a prominent position in the church, performing the duties of some of its most important offices. His mother, Alethea, was the daughter of Dr. Elisha Lord, a celebrated physician of Abington, Conn., and a grand-daughter of Rev. Hezekiah Lord, a noted preacher of his time. Inheriting the traits of character peculiar to these worthies of the olden times, he became a very useful member of the Tabernacle society in this city; to them his loss must be very great.

He was fitted for college at Phillips Academy, Andover, and was a graduate of Yale College in the class of 1819. He always took a lively interest in those two institutions, frequently attending the annual commencements, and ready to coöperate in all measures tending to the extension of their usefulness in every direction.

He commenced his legal studies in Newburyport and completed them in Salem, being admitted to the bar in March, 1824. He commenced practice in this city, and his appearance in the courts has always been marked by distinguished energy and ability. He held the offices of County Attorney and of District Attorney for many years, and, since 1851, has been the Clerk of the Courts for Essex County.

He was always ready for every good cause, and shrank from no

duty imposed upon him by his fellow citizens. As early as 1827 he was chosen a Representative to the General Court, long served as School Committee, was a member of the Constitutional Convention in 1853, Mayor of the city one year, President of the Essex Institute from 1861 to 1865, and President of the Naumkeag Steam Cotton Company. He was always an advocate of the Temperance Reform, and was frequently called upon to take a prominent part in measures of public policy, political, moral, educational and local, that are brought to the notice of the people. We shall miss his genial presence and his hearty greeting in the walks of life; his active habits and the frequent occasions in which he has been called upon to give his services have made him generally known to our citizens, and very widely throughout the county and state.

After remarks from several members it was

Voted: That Messrs. Allen W. Dodge, Abner C. Goodell, Jr., and James Kimball be a committee to report at an adjournment a series of resolutions in respect to the memory of the deceased, and what other action it is appropriate to take.

Adjourned to meet on Friday next (Sept 9), at 3 P.M.



ADJOURNED MEETING, FRIDAY, SEPTEMBER 9, 1870.

The President in the chair.

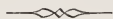
Hon. A. W. DODGE of the Committee on Resolutions, reported the following, which were adopted after suitable expressions of respect to the memory of our deceased friend.

Resolved, That the Essex Institute receives the tidings of the death of ASAHEL HUNTINGTON, a former President of this society, with emotions of grief and surprise. The suddenness of the event, which even if his illness had been of longer duration would have been unlooked-for because of the general good health and strength of the deceased, is as impressive as the knowledge of the loss of a member of society so useful, so widely known and respected.

Resolved, That this society acknowledges its indebtedness to the deceased for the interest he manifested in its success, and for the services rendered by him while chief presiding officer; and that as his fellow citizens, the members of the Institute bear testimony to his uniform urbanity, his great industry and his devotion to so many objects conducive to the public good.

Resolved, That the Hon. Otis P. Lord be invited to prepare a memorial address upon the life and character of the deceased, to be read at a meeting of the Institute.

Resolved, That this society express its sympathy for the family of the deceased in their bereavement, by communicating to them a copy of these resolutions; and that the same be recorded by the secretary.



FIELD MEETING AT METHUEN, THURSDAY, SEPT. 15, 1870.

THE last Field Meeting of the present season was held at Methuen, this day, and was well attended. An extra train at 9.15 A.M., from Salem to Lawrence, carried the principal portion, and others went by the regular 11.35 train. From Lawrence to Methuen the street railway cars were the means of conveyance.

Methuen is a pleasant and flourishing town on the north bank of the Merrimack River, and was formerly comprised within the limits of Haverhill.

In 1725, on petition of the inhabitants, an act of incorporation was passed constituting the west part of Haverhill a distinct township under the name of Methuen. The name is presumed by some to be derived from Lord Methven, and is the only town in the United States, and probably in the world, bearing this name. The origin of this name, and why it should have been adopted, are interesting subjects for the local historians to investigate. There is a parish of Methven in Perthshire, Scotland, in which Methven castle and the estates of the Lords of Methven are, or were, located. The surface of the township is undulating, with a pleasing variety of hill and dale. The soil is generally very good. The Spicket River flows through the town and has a fall of thirty feet which furnishes a good supply of water power for manufacturing purposes, and around which has grown up a thriving and active village. Like many of the flourishing towns of the Commonwealth, it commenced on a small scale, but among the first things upon which action was taken at the original town meeting were the interests of religion and education. And the town has always since been noted for its liberal support of the church and the school-house. The High School, now under the charge of Mr. H. C. Hallowell, is maintaining an excellent standing, and the common schools of the eight districts are doing a good work in educating the young. There are four churches in the town: Congregational, Rev. M. G. Grassie, pastor; Baptist, Rev. N. M. Williams; Universalist, Rev. C. A. Bradley; and Methodist, Rev. James Noyes. One of the principal industrial interests of the town is the manufacture of hats; three large factories are devoted to this enterprise, and daily produce from seventy-five to one hundred and twenty-five dozen hats each. The Methuen Cotton Mill is being considerably enlarged, and is an

important item in the material prosperity of the town. The addition when completed will give employment to some hundreds more operatives than the present number. Other productive industries are also well sustained, and the stranger, on his first visit, will be favorably impressed with the general busy aspect prevailing throughout the town, whether in passing the extensive and well cultivated farms on the outskirts, or the workshops and stores in the business centre. The people are intelligent, active and enterprising. Hence the visit on Thursday was highly enjoyed by the Institute party.

On the arrival of the company at the Town Hall, a cordial welcome was extended by Messrs. Joseph How, William M. Rogers, Charles Ingalls, and other citizens, who were active in promoting the objects of the meeting, and in extending other courtesies.

Little parties were made up to visit the various points of special interest. Many ascended Currant's Hill to obtain an extensive view of the Merrimack Valley. From this elevated spot the prospect is grandly majestic; we see the distant mountain ranges stretching far off until the eye loses its power to trace even the shadowy outlines, and nearer, the many villages nestling in the valleys, between the heights covered with giant trees; and almost at our feet the beautiful Merrimack rolls along, and we look up on the right and see a ravine view with its arched bridge, unsurpassed in beauty; on the left the busy city of Lawrence, with its extensive manufacturing establishments, its numerous churches and other public buildings, all lending a peculiar charm to the whole scene. The Lawrence and Manchester Railroad track runs directly through this hill, and at the time it was constructed, the several strata of which the hill is composed were plainly traceable.

A few of the visitors, through the kind attention of Charles Ingalls, Esq., were taken to Tower Hill, and visited the farm of Mr. Levi Emery, with its observatory, from which a still more extended view may be enjoyed. Mr. Emery is actively interested in the Essex Agricultural Society, and the members of that society will not be surprised to see it stated that from a few acres of land which were almost valueless ten years ago, Mr. Emery now raises squashes inferior to none, grapes of finest flavor and beauty, strawberries in great quantities, cabbages of excellent size and quality, lettuce whose fame has attracted the first-class hotel proprietors of New York, and indeed almost every variety of vegetable, of superior quality; all on this lately barren hill, nearly three hundred feet above the level of the Merrimack River. Mr. Emery has seventeen hundred grape-vines now loaded with ripe fruit, and two thousand more vines not yet come to bearing. He has introduced a system by which he can furnish lettuce in February as fine and nice as at any other season of the year. His farm is well worth a visit from all interested in that spirit of en-

terprise which enhances the value of land and makes practically useful something that was before of no real benefit. He is conferring a vast good on the community, and we wish him continued prosperity.

Others of the party visited the hat factories of Messrs. Bowen & Emerson, Tenney & Co., and Chas. Ingalls & Son. We were indebted to Mr. Emerson, of the first named firm, for an escort through their extensive manufactory, and were much interested in the successive processes through which the material passes, from the wool to the finished hat. First the wool is scoured or washed; it then goes to the carding machines, whence it is delivered on cones, each cone containing the germ of two hats; the next process hardens them; the next is technically called planking or felting, but we should call it shrinking, and here they begin to assume the appearance of wearable hats, while before this process an outsider would have no suspicion of the use intended for them; they are then blocked, colored, blocked again, dried, stiffened, finished and trimmed, ready for boxing and sending to market. Different sets of operatives are engaged in the different processes, and about ten days are generally required to complete a "batch." As all parts of the work are going on at a time, each day develops about one hundred dozen of the finished hats. Methuen and its mother town of Haverhill both have a good name for their manufactures in this department.

Many of the visitors went into the elevated tower of the Congregational Church, and the pastor pointed out the many objects comprised in the extensive prospect from that position.

The Falls attracted others, but the severe drought of the season had robbed this "lion" of his flowing mane, and they were disappointed; a member of the local committee of reception assured them, however, that if they would call next spring, they could stand here and think of Niagara.

Other features of the town were also visited and enjoyed, and the time was well employed in various interesting rambles and researches. At 1.30 p.m. all met at the Town Hall for the collation, and the excursionists were happy to find that many of the townspeople had brought their provision baskets to unite in a common, social lunch. They had also provided an abundance of hot coffee and tea, fruit, &c., and the collation proved one of the most agreeable features of the day.

At 3 o'clock, Henry Wheatland, the President of the Institute, called the meeting to order, and Mr. F. W. Putnam was requested to act as Secretary, in the absence of that officer.

The records of the preceding meeting were read.

The Secretary announced the following correspondence:—

Abbot, T. C., Lansing, Mich., Aug. 26; Allen, B. R., Marblehead, Sept. 12; Andrews, W. V., New York, Aug. 10; Banvard, Joseph, Boston, Aug. 31; Buffalo His-

torical Society, Aug. 14th; Felt, N. H., Salt Lake City, Utah, Aug. 2; How, Joseph, Methuen, Aug. 22, Sept. 8; Johnson, A. H., Bradford, Aug. 2; Lander B. W., Peabody, Aug. 22; Lord, Otis P., Salem, Sept. 12; Loring, Geo. B., Salem, Sept. 6; Morgan, Geo. E., Beverly, Aug. 29; Morissey, John, Plymouth, Aug. 23; Nelson, S. A., Georgetown, Mass., Sept. 12; New England Historic-Genealogical Society, Aug. 13; New York Historical Society, Sept. 1; New York State Library, Albany, N. Y., Sept. 7; Poole, W. F., Melrose, Aug. 10, 30; Proctor, Thomas E., Peabody, Aug. 29; Robinson, John, Boston, Sept. 12; Ross, A., Boston, Aug. 31; Roundy, H., Salem, Aug. 25; Schouler, Wm., Boston, Sept. 8; Steiger, E., New York, Aug. 9; Tracy, C. M., Lynn, Aug. 12.

The Librarian reported the following additions to the Library:—

By Donation.

ALLEN, B. R., of Marblehead. Address before the Mugford Fire Association of Marblehead, May 17, 1896, by the donor, 8vo pamph.

CHAMBERS OF COMMERCE of New York. Annual Report, 1869-70, 1 vol. 8vo, N. Y., 1870.

CHILD, HAMILTON, of Syracuse, N. Y. Orleans County Directory, 1869, 1 vol. 8vo. Cayuga County Directory, 1869, 1 vol. 8vo. Wayne County Directory, 1867-8, 1 vol. 8vo. Oneida County Directory, 1869, 1 vol. 8vo. Rensselaer County Directory, 1870-71, 1 vol. 8vo. Chenango County Directory, 1869-70, 1 vol. 8vo. Onondaga County Directory, 1868-9, 1 vol. 8vo. Chemung and Schuyler County Directories, 1868-9, 1 vol. 8vo. Genesee County Directory, 1869-70, 1 vol. 8vo. Wyoming County Directory, 1870, 1 vol. 8vo. Tompkins County Directory, 1868-9, 1 vol. 8vo. Niagara County Directory, 1869, 1 vol. 8vo. Cortland County Directory, 1869, 1 vol. 8vo.

FELT, N. H., of Salt Lake City. Bird's Eye View of Salt Lake City, Utah Territory, 1870.

FOOTE, H. W., of Boston. A Sermon, May 29, 1870, by donor, 8vo pamph. A Discourse on the death of George Peabody, by donor, 8vo pamph.

FORSTER, EDWARD J., of Charlestown, Mass. The Pedigree and Descendants of Jacob Forster, Sen., of Charlestown, Mass., 12mo pamph., 1870.

HART, HIRAM S., of Burlington, Vt. Burlington City Directory, including Winoski Falls, from July, 1866, to July, 1868, and July, 1869, to 1870, 3 vols. 12mo.

HATHEWAY, S. W., of Boston. The Church and the World, 12mo pamph.

HOTCHKISS, MISS SUSAN V., of New Haven, Conn. New Haven Directory, 1867, 1 vol. 8vo.

JOHNSON, HENRY D. Trans-Continental Excursion, Boston to San Francisco, May 23 to July 1, 1870, 1 vol. small 4to.

LEE, JOHN C. Commercial Bulletin for July and August, 1870.

MACK, MISS ESTHER C. Salem Register from 1861 to 1868 inclusive, 8 vols. folio.

MANNING, ROBERT. Miscellaneous pamphlets, 34.

MILLER, HARRISON V., of Syracuse, N. Y. Syracuse Directories, 1862-3, 1864-5, 1866-7, 1868-9, 1870, 5 vol. 8vo.

POOL, WELLINGTON, of Wenham. Valuation of the town of Wenham, 1860. Report of the Selectmen of Wenham from 1860 to 1870, inclusive. Report of the School Committee of Wenham from 1857 to 1870 inclusive.

PUTNAM, F. W. History of Essex County, N. Y., 1 vol. 8vo, Albany, 1869.

SCHOULER, WM., of Boston, Mass. Congressional Globe, 1865-66, Parts 1, 2, 3, 4, 5, 1866-7, Parts 1, 2, 3 and appendix, 9 vols. 4to.

SEYMOUR, CHARLES J., of Binghamton, N. Y. Miscellaneous pamphlets, 7.

SILAS BRONSON LIBRARY of Waterbury, Conn. Catalogue, 1 vol. 8vo, 1870.

STICKNEY, M. A. "The Sunrise," Presque Isle, Me., 1869, 1 vol. folio.

SUMNER, CHARLES, Washington. Monthly Agricultural Report, July, 1870.

THAYER, OLIVER. Miscellaneous pamphlets, 15.

UNKNOWN. Annual Report of the State Geologist of New Jersey for 1869, 8vo pamph., Trenton, N. J., 1870. Catalogue of Rutgers College, 8vo pamph. New Brunswick, New Jersey, Agricultural College Reports and Annual Lecture, 1869, 2 pamphlets, 8vo.

VALENTINE, MISS MAGGIE. Miscellaneous pamphlets, 11.

WATERS, H. F. Boston Directory, 1865, 1 vol. 8vo.

WATERS, J. LINTON, of Chicago, Ill. Pamphlets, 5.

WILLARD, JOHN H., of Troy, N. Y. Catalogues of the Troy Female Seminary, 1850 to 1870, inclusive, 16 pamphlets, 8vo.

WORCESTER COUNTY MECHANICS' ASSOCIATION. Annual Reports, April, 1870.

By Exchange.

AMERICAN ENTOMOLOGICAL SOCIETY, Transactions of. Vol. 3, No. 1.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles, No. 150, Juin 15, 1870.

BOSTON NUMISMATIC SOCIETY. American Journal of Numismatics and Bulletin of, for July, 1870.

BOSTON PUBLIC LIBRARY. Class List for Poetry and Miscellaneous Works.

BOSTON SOCIETY OF NATURAL HISTORY, Proceedings of. Vol. xiii, Sig. 18, August, 1870.

IOWA STATE HISTORICAL SOCIETY. The Annals of Iowa for July, 1870. Seventh Biennial Report of the Curators, 8vo pamph., 1870.

KÖNIGLICHE DANSKE VIDENSKABERNES SELSKAB. Oversigt over det Kongelige danske Videnskabernes Selskabs Forhandlinger og dets Medlemmers Arbejder i Aarene, 1869.

KÖNIGLICHE PHYSIKALISCH—ÖKONOMISCHE GESELLSCHAFT ZU KÖNIGSBERG. Schriften der Königl. Physikalisch, Ökonomischen Gesellschaft zu Königsberg 1869, 2 pamphlets, 4to.

MICHIGAN STATE AGRICULTURAL COLLEGE, Catalogue of the Officers and Students of. 1870.

MICHIGAN STATE BOARD OF AGRICULTURE. Eighth Annual Report of the Secretary, 1 vol. 8vo, Lansing, Mich., 1869.

NATURFORSCHENDEN VEREIN IN BRÜNN. Verhandlungen des Naturforschenden Vereines in Brünn, Band vii, 1868.

NATURHISTORISCHE GESELLSCHAFT. Achtzehnter und Neunzehnter Jahresbericht der Naturhistorischen Gesellschaft zu Hanover von Michaelis, 1867, bis dahin 1869.

SOCIÉTÉ VANDOISE DES SCIENCES NATURELLES. Bulletin de la Société Vandoise des Sciences Naturelles, vol. x, No. 62.

VERZEICHNISS AUSGEWÄHLTER. Werke Aus dem Verlage von F. C. W. Vogel in Leipzig, 1870.

PUBLISHERS. American Literary Gazette. American Naturalist. Book Buyer. Canadian Naturalist. Christian World. Cosmos. Eclectic. Essex Banner. Gardeners' Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer. Semi-monthly Visitor. Silliman's Journal. Sotherton's Catalogue. The American Chemist. The Lecture Season. The Weekly Public Spirit. Quaritch's Catalogue.

BULLETIN

OF THE

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VOL. 2. SALEM, MASS., NOV. AND DEC., 1870. Nos. 11, 12.
One Dollar a Year in Advance. 10 Cents a Single Copy.

FIELD MEETING AT METHUEN, THURSDAY, SEPT. 18, 1870.

[Concluded from page 160.]

After a few general remarks from the PRESIDENT, alluding to this first visit of the Institute to the town, Mr. F. W. PUTNAM was called upon as the first speaker. He spoke of the dry time as illustrated by the present state of the Spicket River, and the swamps about the pond. He selected as the theme of his remarks some Indian stone implements which some one had placed upon the stand. He urged the importance of making collections of these aboriginal relics as a means of tracing the progress and movements of the several Indian tribes. Their line of migration could be traced by finding the particular kind of stone of which the articles were made, and then comparing a large number of these relics gathered in different sections of the country. He then described the several implements which were either donated or placed on the table for exhibition, as hatchets, arrowheads, sinkers for nets, knives and grain pestles.

Rev. N. M. WILLIAMS, of Methuen, made a short speech, in which he spoke of the pleasure with which the people welcomed the Institute to that town; and, alluding to the name of the place, said it was supposed to be named after a certain Lord Methven, which easily became Methuen.

Prof. E. S. MORSE, of Salem, compared the manufacture of hats, which had been witnessed by most of the party, to the formation of the egg, and traced, in his usual happy manner, the modification or change of condition which each had undergone in its development.

He took up and described some fresh water clams, which had been found during the forenoon, and explained their difference from the common salt water clams.

Rev. T. G. GRASSIE, of Methuen, alluded to the reputation of Essex County, and spoke of the necessity of the meetings of the Institute being held in the same place often, and the oftener the more successful. He thought that these meetings were just what was needed. He alluded to science and religion, and said that as a religious man he did not fear science, for if there was anything in religion that science could correct, it should be corrected. He mentioned a new machine now in operation in this town for making wheels, and spoke of its great utility.

Mr. C. M. TRACY, of Lynn, in speaking of the pleasure it gave him to visit Methuen, said that he was convinced that a plain, unpretending New England town often had more of comfort and thrift in it than many other places which were dignified by the name of cities. Proceeding to examine the botanical specimens on the table, he remarked that the *Sarracenia*, or Pitcher Plant, fine samples of which lay before him, was one of the most remarkable things to be found among our vegetation. Differing so largely from all other plants as to constitute a separate family of its own, it included only one or two genera and a few species, real eccentrics of the floral world. One species is with us, another in the South, a third, of a different genus, in South America, but there are not many more. The vasi-form leaves are a constant character, and it is no small problem among the scientific, to find how it happens that they are always supplied with water even in the severest drought. Such a drought is now raging, almost without precedent, yet the friend who brought these found them half full, while the peat moss around them was so parched as to crackle under the feet. It is always so. It is plainly no catching and saving of rain, for none has fallen. Some have thought it a secretion from the plant itself; but the speaker inclined to ascribe it to the condensation of dew on the upper part of the leaf, running down to supply the tank below, which is kept cool for the purpose by the slow evaporation through the permeable sides. But any way considered, it is a beautiful and curious plant, wholly American, and fitly known as the Huntsman's or Forefather's Cup.

In exploring about the Falls to-day he had found some good specimens of the Blue Gentian (*G. Andrevsii* or *saponaria*). This is not the lovely Fringed Gentian of Bryant's well known poem, though it comes at the same season and is almost as beautiful. This species, as well as one or two others, is remarkable for never expanding its flowers; so that what appear here as full grown buds are rarely per-

fect blossoms, never exposing the interior organs. All our Gentians are blue, but in other lands there are red species, and a splendid yellow one (*G. lutea*) in Central Europe, whose root is an important medicine, intensely bitter in taste.

Perhaps the most remarkable thing brought forward in this line to-day, was a huge cluster of orange-colored fungi, detached in one mass from the decayed wood, where they grew, and served up in a dish like a pile of tempting cream cakes. The speaker disclaimed the critical knowledge of those that would enable him to give the exact name; but as to their general character there could be no question. These are plants of exceeding simplicity of structure, whose proper framework and growth consist of mere tubular, branching cells, running every way through the decaying substances where they seat themselves, and interlacing to a plexus little inferior to the felt of a Methuen hat. From this living felt, or *mycelium*, rises, here and there, a bud-cell, growing often to a great size, and developing, for floral and reproductive purposes, to such strange and curious forms as we see in the mushrooms of the table, and in these fungi of to-day, and ten thousand others beside. We generally suppose the toadstools we see are the whole plants; but really they are only the flowers or what answers therefor. Thus will be seen the real explanation of another botanical puzzle. Fungi having been found to evolve carbonic acid, while plants in general give off oxygen, it was inferred that their economy was of the reverse order, and that they were peculiarly deadly in their character, and nourished by decay and corruption. But when we look at them as only the flowers of a concealed vegetation, we remember that all expanded flowers thus yield carbonic acid, while the oxygen is only thrown off by the green leaves, and only very slightly where there are none of these, as in broomrapes and parasitic-dodders. So the anomaly vanishes and the constitution of these singular things is found to be much the same as in other vegetation. To any one at all conversant with vegetable chemistry, it would be a mystery indeed, how a plant with greater power of development than we see anywhere else, built up of just such cells, and these of the same chemical substance as in other plants, should not show the same results from its vital processes in other respects as they. And thus, also, very much disappears from that character of gloom and deadliness that so many have been prone to ascribe to these innocent plants. It is not, indeed, true, that they feed more than others upon decay; the farmer nourishes his choicest crops with as corrupt matter as ever fed a fetid toadstool, and we think no harm of it. The glossy gold-thread and the fragrant twinflower prefer as deep shadows as these, but no one thinks them deadly. The whole of this talk about associating fungi, and death, and charnel-houses, is but a relic of the old

time superstition, and of that ignorance which it is the blessed mission of "Star-eyed Science" to counterwork and dispel.

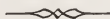
The PRESIDENT alluded to this town as the birthplace of Judge White, the first President of the Institute, who held the office from its organization in 1848 to his decease in 1861, and who was one of its most liberal contributors, having donated, at several times, nearly 8000 volumes to the library; he called upon Rev. T. T. STONE, formerly of Salem, who made a brief response, bearing testimony to his excellence and worth.

Mr. PUTNAM exhibited a dress, presented to the Society by Mrs. Tyrrel of Methuen, which probably had been made by the Indians of the Northwest coast of America. He read a circular from Prof. C. H. Hitchcock, of Hanover, N. H., soliciting aid from all friends of scientific research and mountain explorations, to enable Prof. J. H. Huntington, Assistant Geologist of the State of New Hampshire, and his associates, to spend the next winter (1870-1) upon the top of Mount Washington, with all the needed comforts of life, the proper instruments, and the means of communicating by telegraphic cables daily reports of their observations. He remarked upon the importance of the proposed expedition, and commended its claims upon the public.

Brief remarks were then made by Messrs. Chas. Ingalls, Joseph How, and others of Methuen.

After unanimously adopting the following resolutions, the meeting adjourned.

Resolved, That the thanks of the Essex Institute be tendered to the Selectmen of Methuen for the use of the Town Hall; also to Messrs. Joseph How, Wm. M. Rogers, Charles Ingalls, Samuel G. Sargent, John Low, Ebenezer Sawyer, E. A. Archibald, Albert Dame, Rev. Messrs. C. A. Bradley, James Noyes, T. G. Grassie and N. M. Williams, Mrs. Williams, Mrs. Grassie, the Misses How and the Misses Barker, and other ladies and gentlemen who have aided in giving interest to the meeting this day.



REGULAR MEETING, MONDAY, OCTOBER 3, 1870.

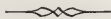
President in the Chair.

T. P. Abell and David Wentzell, both of Salem, were elected resident members.

REGULAR MEETING, MONDAY, NOVEMBER 7, 1870.

President in the Chair.

Edward D. Ropes and William G. Webb, both of Salem, were elected resident members.



QUARTERLY MEETING, WEDNESDAY, NOVEMBER 9, 1870.

President in the Chair.

The following amendment to the constitution having been submitted at the annual meeting in May, and the quarterly in August, was unanimously adopted.

Instead of Article 1, substitute the following:—"Article 1:—The objects of the ESSEX INSTITUTE are the collection and preservation of materials for the Civil and Natural History of the County of Essex, and the advancement of Science, Literature, and the Arts."

Miss Lucy Larcom of Beverly, Charles H. Goss, Isaac M. Gattman and George R. Harris, all of Salem, were elected resident members.



REGULAR MEETING, MONDAY, DECEMBER 5, 1870.

The first evening meeting of the present season was held at the rooms in Plummer Hall. The President in the Chair.

Records of preceding meeting read.

The Secretary announced the following correspondence:—

Abell, T. P., Salem; Ames, James T., Chicopee, Oct. 1; Ames, R. W., Boston, Oct. 14, 17; Andrews, Wm. P., Salem, Aug. 18; Appleton, Francis H., West Peabody, Oct. 7; Ball, Mary F., Presidio, Oct. 15; Bergen Museum, Oct. 1; Bolles, E. C., Brooklyn, Sept. 30; Boston Public Library, Nov. 29; Brooks, H. A., Salem, Oct. 21; Brooks, W. G., Boston, Nov. 17; Buffalo Historical Society, Oct. 28, Nov. 14; Calkins, W. W., Chicago, Ill., Oct. 20; Chamberlain, James A., Salem, Oct. 9; Chipman, R. M., Ware, Mass., Oct. 11; Choate, Abby P., Salem, Nov. 11; Cogswell, Geo., Bradford, Nov. 26; Edgerly, Albert W., Lynn, Nov. 12; Endicott, Robert R., Beverly, Oct. —; Emery, Geo. E., Lynn, Oct. 18; Gattman, J. M., Salem, Nov. 18; Goss, Chas. H., Salem, Nov. 14; Higbee, Chas. H., Boston, Sept. 22; Iowa Historical Society, Nov. 19; Johnson, A. H., Bradford, Oct. 13, 19; Kongelige Danske Videnskabernes Selskab, Nov. 5; Larcom, Lucy, Beverly Farms, Nov. 5, 21; Lincoln, S., Jr., Salem, Oct. 13; Loring, A. K., Boston, Nov. 2, 4, 7, 17; Lath, M., Cincinnati, Nov. 2, 3; Maine Historical Society, Nov. —; Massachusetts Historical Society, Nov. 26; Minnesota Historical Society, Sept. 30, Oct. 20; Moravian Historical Society, Nov. 18; Munsell, Joel, Albany, N. Y., Oct. 24; New England Historic-Genealogical Society, Oct. 27, Nov. 23; New York Genealogical Society, Nov. 14; New York Lyceum of Natural History, Oct. 4; New York State Library, Sept. 7, 19,

22, Nov. 5; Pickering, Mary O., Salem, Oct. 15; Pingree, David, Salem, Sept. 9; Preble, Geo. H., Charlestown, Nov. 21; Rhode Island Historical Society, Nov. 3; Ropes, Edward D., Salem, Nov. 17; Silliman, B., New Haven, Oct. 28; Silsbee, J. L., Salem, Sept. 5; Simonds, J. R., Salem, Sept. 24; Seymour, C. J., Binghamton, N. Y., Sept. 9; Upham, W. P., Worcester, Mass., Nov. 17; White, W. O., Keene, N. H., Sept. 15; Wiggin, John K., Boston, Oct. 15; Woolsey, Theodore D., New Haven, Nov. 23; Woodward, A., Franklin, Conn., Nov. 16.

The Librarian reported the following additions:—

Donations.

APPLETON, WM. S., of Boston. Ancestry of Priscilla Baker, 1 vol. small 4to, Cambridge, 1870. Genealogy of the Coffin Family in New England, 8vo. pamph. Description of a Selection of Coins and Medals in America, 8vo pamph.

BARLOW, JOHN, Legislative Documents of Mass. for 1870, 3 vols. 8vo. Miscellaneous pamphlets, 41.

BROOKS, HENRY M., Medical and Agricultural Register, 1 vol. 8vo. Letters on American Slavery, 1 vol. 16mo. Miscellaneous pamphlets, 3.

BROWNE, ALBERT G., Miscellaneous pamphlets, 120.

BROWN, EDWARD, Lynn Weekly Mirror for 1825-6, 1 vol. folio.

CALLER, JAMES M., Thirty-two Guide Books to places in Europe.

CHAMBERLAIN, JAMES A., Miscellaneous pamphlets, 215. Flint's Geography, 1 vol. 8vo, Boston, 1833. New York Gazetteer, 1 vol. 12mo. Albany 1842, Miscellaneous vols., 13.

CHAMBERS, ROBERT B., of Providence, R. I. Commemorative Discourse in Providence, Oct. 18, 1868, by James G. Vose, Pastor, 1 vol. 12mo.

CITY OF PROVIDENCE. Providence City Documents, 1869-70, 1 vol. 8vo.

CLOUTMAN, WM. R., of Charleston, S. C. Report on Agriculture, for 1868, 1 vol. 8vo; Washington, 1869. United States Coast Survey for 1867, 1 vol. 4to, Washington, 1869. Land Office Report for 1868, 1 vol. 8vo. Report of the Select Committee on the Memorial of Davis Hatch, June 23, 1870, 1 vol. 8vo, Washington. Also several pamphlets.

EMERY, GEO. E., of Lynn. Almanac and Register for 1757, 1 vol. 12mo, Dublin. Farmer's Almanacks from 1833 to 1858, and several Manuscript Papers.

FOOTE, CALEB. Files of several County papers for Aug., Sept., 1870.

GEEEN, S. A., of Boston. Report of the School Committee of Boston for 1869, 1 vol. 8vo. Miscellaneous pamphlets, 105.

HALL, B. H., of Troy, N. Y. Daily Programme of the 19th Meeting of the American Association for the Advancement of Science held at Troy, N. Y., 1870, 12mo. pamph.

HAMMOND, CHARLES, of Springfield, Mass. Catalogue of Monson Academy for 1870, 8vo. pamph.

HAWKES, N. M. Water Report of Lynn for 1870, 1 vol. 8vo.

HOBERT, Mrs S. Cox's View of America, 1 vol. 8vo, Phila., 1795.

HYATT, A. Texas Almanac for 1870. Miscellaneous pamphlets, 70.

KNIGHTS, B. R. The Independent for 1855-6-7, 1860-61 and 1862-63, 3 vols. folio.

LEE, JOHN C. Commercial Bulletin for Sept. and Oct., 1870.

LINCOLN, SOLOMON, of Boston. Centennial Anniversary of the Town of Cohasset, May 7, 1870, 8vo. pamph.

MACK, WM. Miscellaneous pamphlets, 18.

MOULTON, HENRY P., of Beverly. Legislative Documents of Mass., for 1870, 4 vols. 8vo.

MUNSELL, JOEL, of Albany. Transactions of the Albany Institute, vol. iii, vi, 2 vols., Albany, 1855, 1870. Troy Directory for 1860, 1 vol. 12mo. Schenectady

Directory for 1860-61, 1 vol. 12mo. Hudson Directory for 1851-52, 1 vol. 16mo. New York City Directory for 1853-54, 1 vol. 16mo. Fall River Directory for 1859, 1 vol. 16mo. Taunton Directory for 1861, 1 vol. 16mo.

PACKARD, A. S. Miscellaneous pamphlets, 12.

PARSONS, C. W., of Providence, R. I. Memoir of Usher Parsons, M. D., of Providence, by the donor, 1 vol. 12mo, 1870.

PERKINS, GEO. A. Address of Mr. Everett, and Poem of Dr. O. W. Holmes, at the dinner given to H. I. H. Monseigneur, the Prince Napoleon, Sept. 25, 1861, 1 vol. 12mo, Cambridge, 1861. Miscellaneous pamphlets, 108.

PEYTON, JOHN LEWIS, of London. Over the Alleghanies and across the Prairies, 1 vol. 12mo, London, 1869.

PICKERING, MARY O. Almanacs from 1733 to 1811.

PIERSON, G. H. Legislative Documents of Mass. for 1867-68, 4 vols.

POOLE, WM. F., of Cincinnati, Ohio. The Witchcraft Delusion of 1692, by Gov. Thomas Hutchinson, with notes by the donor, small 4to, Boston, 1870. Forty-first Annual Report of the Common Schools of Cincinnati, June 30, 1870, 8vo pamph.

PREBLE, G. H., U. S. N. Genealogical Sketch of the Preble Family in America, 1 vol. 8vo, Boston, 1858.

RICE AND BELL, of St. Paul, Minn. St. Paul Directory for 1869-70, 1 vol. 8vo.

ROGERS, WM. M., of Methuen, Mass. Annual Report of Methuen, Feb. 1, 1870, 8vo pamph. Carleton's Lecture in Methuen, Feb. 9, 1833, 8vo pamph.

SALEM EAST INDIA MARINE SOCIETY. Acts of Incorporation and By-Laws, 12mo pamph., Salem, 1870.

SEYMOUR, C. J., of Binghamton, N. Y. Manual of the Broome County Medical Society, 8vo pamph., 1870.

SILLIMAN, B., of New Haven, Ct. Directory of Grass Valley for 1865, 1 vol. 8vo. New Haven Directory for 1869, 1 vol. 12mo.

STANIFORD, D., of Boston Highlands. Thirty Miscellaneous Numbers of Juvenile Newspapers.

STONE, E. M., of Providence, R. I. Annual Report of the School Committee of Providence, June, 1870, 8vo pamph.

TUCKER, JONATHAN. Narrative of the Captivity and Removes of Mrs. Mary Rowlandson, written by herself, 1 vol. 16mo, Lancaster, 1828.

UPHAM, J. BAXTER, of Boston. Typhoid and Typhus Fever, as it occurred in the Boston City Hospital, by J. B. Upham, M. D., from June 1, 1864, to June 1, 1869, 1 vol. 8vo, Boston, 1870.

UPTON, JAMES. Christian Review, 28 vols. 8vo. Lempriier's Universal Biography, 2 vols. 8vo. Hayward's New England Gazetteer 1 vol. 8vo. Sartain's Union Magazine for 1830, 1 vol. 8vo. National Almanacs, 1863-4, 2 vols. 12mo. Boston Almanacs, 1839 to 1858, 27 vols. 18mo. Salem Directory for 1864, 1 vol. 12mo. Manners and Customs of the Jews, 1 vol. 12mo. Putnam's Semi-Monthly Library, 23 vols. 12 mo. The Crescent and the Cross, 2 vols. 12mo. Eleanor, 1 vol. 12mo. Home Influence, 2 vols. 12mo. The Trials of Margaret Lindsay, 1 vol. 12mo. The Mother's Recompense, 1 vol. 12mo. The Foresters, 1 vol. 12mo. Eothen, 1 vol. 12mo.

VERRILL, A. E., of New Haven, Ct. Miscellaneous pamphlets, 15.

WATERS, H. F. Report of the School Committee of Boston for 1869, 1 vol. 8vo.

WATERS, J. LINTON, of Chicago, Ill. Transactions of the Illinois State Agricultural Society, vol. 7, 1867-8, 8vo, Springfield, 1870. (2 copies.)

WHITTLE, GEORGE M. The Nightingale, 1 vol. 16mo. Portsmouth, 1804. Chants, 2 vol. 12mo. Hymn Book, 1 vol. 8vo, oblong.

WOODWARD, A. Life of Gen. Nathaniel Lyon, by A. Woodward, 1 vol. 12mo, Hartford, 1862. History of Franklin, Conn., by A. Woodward, 1 vol. 8vo, New Haven, 1869.

By Exchange.

ACADÉMIE DES SCIENCES, BELLES-LETTRES ET ARTS. Actes de l'Académie Impériale des Sciences, Belles-Lettres et Arts de Bordeaux. 3e Série, 30, 31 Années 1868-1869, 8vo, Paris, 1868-9. Prix décernés par l'Académie, 8vo, Bordeaux, 1870.

ACADÉMIE ROYALE DES SCIENCES, DES LETTRES ET DES BEAUX-ARTS DE BELGIQUE. Bulletins 2me Sér, Tome 27, 28, 38me Année 1869, 8vo, Bruxelles, 1869. Annuaire de l'Académie, 36me Année, 12mo, Bruxelles, 1870.

ALBANY INSTITUTE. Transactions, vol. vi, Albany, 1870.

ARCHIV FÜR ANTHROPOLOGIE. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. Vierter. Band, 4to, Braunschweig, 1870.

CONNECTICUT ACADEMY, Transactions of. Vol. ii, Part i, 8vo pamph., New Haven, 1870.

CONNECTICUT HISTORICAL SOCIETY, Collections of. Vol. ii, Hartford, 1870.

IOWA STATE HISTORICAL SOCIETY. Annals of Iowa, for Oct., 1870, 8vo pamph.

MICHIGAN STATE AGRICULTURAL COLLEGE. Catalogue of the Officers and Students, 1876, 8vo pamph.

MINNESOTA HISTORICAL SOCIETY. Collections, vol. iii. Part i, 8vo pamph.

MORAVIAN HISTORICAL SOCIETY. Transactions. Part iv, 8vo pamph.

MUSEUM OF COMPARATIVE ZOOLOGY. Bulletin, vol. ii, No. 1, 8vo pamph, 1870.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. New England Historical and Genealogical Register, Oct., 1870.

NEW YORK LYCEUM OF NATURAL HISTORY. Proceedings, vol. i, Sigs. 1, 2, 3. Annals, vol. ix, Sigs. 23, 24, 25, 26.

NEW YORK STATE LIBRARY. New York State Documents for 1864, 1865, 1866, 1867, 1868, 1869, 121 vols. 8vo. Laws of New York for 1864, 1865, 1866, 1867, 1868, 1869, 10 vols. 8mo. Regent's Report for 1865, '66, '67, '68, '69, 5 vols. 8vo. N. Y. Civil List, 2 vols. 12mo, 1869-70. N. Y. Mannals from 1841 to '70, 12 vols. 16mo. N. Y. State Register, 1830, '4, '5, '40, '3, '5, 6 vols. 12mo. Royal Calendar, 6 vols. N. Y. Directories, 1857, '60, '67, 3 vols. 8vo. Rochester Directories, 1853, '54, '55, '61, 3 vols. 12mo. Troy Directories, 1857, '58, '59, '60, 4 vols. 12mo. Schenectady Directories 1857, '58, '62, '63. Albany Directories, 1860, '62 '63. Brooklyn Directories, 1856, '67 '68. Milwaukee Directories, 1851, '52, '56, '57, '58. Oswego Directory, 1864, '65. Poughkeepsie Directories, 1856, '57, '59, '60. Hudson Directory 1856, '57. Documents relating to the Colonial History of N. Y., 1 vol. 4to, Albany, 1861. Miscellaneous pamphlets, 640.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES, Proceedings of. May, June, July, and Aug., 1870.

PUBLISHERS. American Journal of Science. American Literary Gazette. American Naturalist. Book Buyer. Boys' Journal. Canadian Journal. Christian World. Cosmos. Eclectic. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quaritch's Catalogue. Sailors' Magazine and Seamen's Friend. Salem Observer. Sotheran's Catalogue. The Weekly Public Spirit.

SOCIÉTÉ LINNÉENNE DE BORDEAUX. Acts. Tome xxiv, 5 (1868), 6 (1870). Tome xxvii, 1, 1870, 8vo.

VERMONT HISTORICAL SOCIETY, Collections of. Vol. I, 8vo. Montpelier, 1870.

VERMONT STATE LIBRARY. Twelfth Registration Report of Vermont for 1868, 1 vol. 8vo. Journal of the Proceedings of the Constitutional Convention of Vermont, 1 vol. 8vo, 1870.

The President mentioned that the fiftieth anniversary of the organization of the Essex Historical Society would occur on Friday, the 21st of April next, and suggested the propriety of having some notice taken of this event. After remarks from several members, on motion of Mr. James Kimball it was *voted*: That arrangements be made for an appropriate celebration, under the directions of the Lecture Committee.

MR. JAMES KIMBALL exhibited a map containing an outline of the Peninsula of Salem situated between the North and South Rivers, with the indentations and coves, as it was in 1626, when Roger Conant and his companions landed and formed the first permanent settlement in the Massachusetts Bay Colony, so far as it could be ascertained by consulting the records, and from other sources. He gave a brief description of the same, tracing the shore line from the northeastern point near the terminus of Beverly Bridge to the square in Peabody, thence around the neck which has undergone few changes, and on the southern side to the mill pond.

The physical character was noted, the land on the North River rising in some places somewhat abruptly from the river, especially on the western end, gradually tending to the south. The south side had also several abrupt hills with openings between, sloping down to the river. These elevations were no doubt covered with wood; the pine on the sand hills on the north, and the harder woods on stronger lands in the centre and on the south. There were depressions of swampy lands (now clearly indicated) extending nearly the whole length; undoubtedly shallow ponds at some early period filled in with vegetable accumulations and by the denudation of the higher lands; the eastern portion about sixteen feet and the western about twenty-two feet above mean high water. This irregularity of surface has been modified, the elevations furnishing materials for the depressions, so that at the present time we find it comparatively level. Many of our streets have been raised since the commencement of the present century, from one to three feet. The soil is light and sandy loam with gravel and sand underlying; in some places, with a substratum of clay. Those places that were originally swampy are clearly defined by the black muck underlying. After alluding to the ledges in the western section of the town, the surface rocks, and the character of the vegetation, he concluded his interesting communication with a brief résumé of the principal changes that have occurred, especially those within the recollection of our older inhabitants.

Mr. Kimball intends to speak on this subject, more fully, though perhaps in a somewhat modified form, at a future meeting of the Institute.

REGULAR MEETING, MONDAY, DECEMBER 19, 1870.

President in the chair. Records of preceding meeting read.

The Secretary announced the following correspondence:—

U. S. Dept. Interior, Oct. 31; New York, Secretary of State, Dec. 8; Buffalo Historical Society, Dec. 12; Emden, Naturforschende Gesellschaft, Oct. 1; Leeds Philosophical and Literary Society, Sept. 5; London Society of Antiquaries, Nov. 23; Lüneburg Naturwissenschaftliche Verein, July 21; Maine Historical Society, Dec.; München Das Bibliothekariat der König. Bayer Akad. der Wissenschaften, Sept.; New England Hist. Gen. Society, Dec. 12; Brooks, H. A., Salem, Dec. 8; Hall, F. H., Chicago, Dec. 11; Leavitt, J. H., Salem, Dec. 12; Paine, Nath'l, Worcester, Dec. 2; Perkins, James, Boston, Dec. 13; Poole, W. F., Cincinnati, Ohio, Dec. 14; Prescott, W., Concord, N. H., Nov. 29; Roberts, Adeline, Salem, Nov. 23.

The Librarian reported the following additions to the Library:—

By Donation.

MASSACHUSETTS STATE DEPARTMENT. Massachusetts Public Documents for 1869, 4 vols. 8vo, Boston, 1870. Acts and Resolves of Massachusetts, 1870, 1 vol. 8vo.

U. S. SURGEON GENERAL'S OFFICE. Annual Report of the Surgeon General, U. S. A., 12mo pamph., 1870.

FROM AUTHORS. Address by B. F. Butler, in Music Hall, Boston, Nov. 23, 1870, 8vo pamph. Writings of Wm. G. Goddard, by his son, Francis W. Goddard, 2 vols. 8vo, Providence, 1870. Lecture by C. Sumner, "The Duel between France and Germany," 8vo pamph.

HOLDEN, N. J. Massachusetts Legislative Documents, for 1869, 1870, 14 vols. 8vo.

LAMSON, G. W. Physical Media in Spiritual Manifestations, 1 vol. 12mo, Philadelphia, 1869.

LEE, JOHN C. Commercial Bulletin for Dec., 1870.

PERKINS, JAMES, of Boston, Mass. Centennial Memorial of the Lodge of St. Andrew, 1 vol. small 4to, Boston, 1870.

PUTNAM, MRS. EBEN. Miscellaneous pamphlets, 37.

STONE, ALFRED, of Providence, R. I. Providence Daily Journal from January to June, 1870, inclusive.

WATERS, J. LINTON, of Chicago, Ill. Annual Report of the Board of Education of Chicago, for 1870. Biennial Report of the Treasurer of Illinois, 1 vol. 8vo, Springfield, 1867.

By Exchange.

BALTIMORE, MD., PEABODY INSTITUTE. Proceedings, on the Announcement of the death of Hon. J. P. Kennedy, who died Aug. 18, 1870; 8vo.

BOLOGNA, ACCADEMIA DELLE SCIENZE DELL' ISTITUTO. Rendiconto delle Sessioni An. Accad., 1868-69.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, Vol. 13, Sig. 19.

COPENHAGEN, KONGELIGE DANSKE VIDENSKABERNES SELSKAB. Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger og dets Medlemmers Arbejder i Aaret, No 6, 1868, No. 4, 1869, and No. 1, 1870, 8vo, Kjobenhavn.

KONGELIGE NORDISKE OLDSKRIFT-SELSKAB. Mémoires de la Société Royale des Antiquaires du Nord, 1866, '67, '68, '69, 8vo, Copenhagen. Tillæg til Aarboger

for Nordisk Oldkyndighed og Historie, 1866, '67, '68 '69, 8vo. Oldnasdisk Ordlog af Erik Jonsson, 8vo, Kjöbenhavn, 1863.

DRESDEN, NATURWISSENSCHAFTLICHE GESELLSCHAFT "ISIS." Sitzungs-Berichte, April, Mai, Juni, 8vo, Dresden, 1870.

EMDEN, NATURFORSCHENDE GESELLSCHAFT. Jahresbericht, 1868, 8vo.

FRANKFURT, ZOOLOGISCHE GESELLSCHAFT. Der Zoologische Garten. Zeitschrift für Beobachtung Pflege und Zucht der Thiere. Herausgegeben von Dr. F. C. Noll, Jahrg. xi, 6 Nos. 8vo, Frankfurt, A. M., 1870.

LUNEBURG, NATURWISSENSCHAFTLICHER VEREIN. Jahreshefte, 1868-9, 8vo.

MUCHEN, KÖNIGLICH BAIERISCHE AKADEMIE DER WISSENSCHAFTEN. Sitzungsberichte, 1869, 1870.

MOSCOU SOCIÉTÉ IMPERIALE DES NATURALISTES. Bulletin, Année 1869, No. 4, 8vo.

NEW JERSEY HISTORICAL SOCIETY, Proceedings of. Vol. ii, No. 2, Second Series, 1870, 8vo.

QUEBEC LITERARY AND HISTORICAL SOCIETY. Transactions, New Series, Part 7, Session of 1869-70, 8vo, Quebec, 1870.

PUBLISHERS. American Naturalist. Christian World. Essex Banner. Gardeners' Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Lawrence American. Little Giant. Lynn Semi-Weekly Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quaritch's Catalogue. Salem Observer.

The following donations to the Historical Department were announced :—

DOWNIE, Mrs. E. A. An old Memorial Pitcher—an engraving of the Boston Massacre, March 5, 1770.

FLOWERS, WILLIAM H. Fifty Dollar Bill of Confederate currency.

HOBART, Mrs. SARAH. An old Spinning Wheel for woolen yarn.

TUCKER, JONATHAN. An Umbrella and a Parasol of the fashion of 1804.

George F. Choate of Salem, Mary O. Hodges of Salem, and Mary W. Bemis of Chicopee, were elected members.

Mr. F. W. PUTNAM made a few remarks on two specimens of interest which had recently been added to the Museum of the Peabody Academy of Science. One of them was a fish not before known in Massachusetts waters. This specimen was a species of *Hemiramphus*, a genus of tropical fishes belonging to the flying fish family. The species represented by the specimen on the table was probably a West Indian fish that had strayed from its natural waters and followed the Gulf Stream until it neared the Massachusetts coast—had entered our North river, and followed it up until it reached the millpond at Danversport, where, in consequence of the water being too fresh, it died and had been washed ashore. The specimen was found on the shore of the millpond and given to SAMUEL P. FOWLER, Esq., of Danvers, who presented it to the Academy. This was the first instance of a species of the genus *Hemiramphus* having been found in Essex County waters, and though a straggler, and hence not a regular County fish, was still a most perfect and interesting addition to the large ichthyological collection of the Academy.

The other specimen of which he spoke was that of a woodchuck, presented to the Peabody Academy by D. W. SMEAD, Esq., who found it in the Adirondack region. This skull showed a singular abnormal growth of the two incisor teeth of the upper jaw. The right incisor had been forced somewhat from its proper line of growth, and was about three times its normal length, while the left incisor had continued to grow in the line of the natural curve of the tooth, and had made a complete circle, passing through the bones of the roof of the mouth, and curving under the nasal bone, had passed through the premaxillary bone, penetrating it at the side of its original position, and had continued to grow in its circle until it had again penetrated the bones of the roof of the mouth and was just passing through the premaxillary a second time, when the animal died, probably from starvation. In explaining how this extraordinary growth had taken place, Mr. Putnam gave an account of the formation, structure and growth of the incisor teeth of the Rodents, and showed how by the constant wearing away of the softer parts of the incisor teeth on the inside surfaces of the teeth of the upper and under jaws, the teeth were kept constantly sharpened, and their edges worn away as fast as the growth took place, and how in case of injury or loss of the two opposing teeth in the under jaw, an abnormal growth would take place as in the case of the specimen in hand.

The President then introduced Mr. WILLIAM MAYNARD, of Montreal, stating that his lecture would be highly interesting to the tanners and curriers of the city, and referring in complimentary terms to the editor of "The Hide and Leather Interest," who had spent some time in Salem last summer, and had published a considerable amount of interesting historical information with regard to the tanneries of Salem, which had been reprinted in the Salem papers.

Mr. MAYNARD then addressed the audience as follows :—

The earliest authentic account that we have of the employment of means for curing, preserving and tanning leather, is found in the history of the Egyptian people. They, it seems, steeped the skins in a bath made of meal and water, for a few days. This softened the fibrine and gluten, as also the albumen of hide, and served also to expel the scrum, etc. The hides were then submitted to the influence of a strong decoction, or more probably the expressed juice of the *Periploca sycamone*, generally known as the Devil's Weed, found in great abundance at the present day upon the plains of Arabia, and used by the people of those sections for a similar purpose at the present day, namely, to depilate and prepare the skin for preservation — which may be termed the combination process — as they use flour, oil, native kalium and a decoction made from a species of *Quercus*

Rhus and Acacia, and thus hypothetically we are able to surmise the possible method employed by the Egyptians. That they had reached a state of perfection in the art is proved from the writings of Herodotus, for the process of unhairing was performed by them in from four to five days; and as a further proof of their proficiency we will quote from the 36th chapter of Exodus, verse 19:—

“And he made a covering for the tent, of rams’ skins dyed red, and a covering of badgers’ skins above that.”

The Jews having been in bondage in Egypt for many years, considering the period to which this quotation refers, it is not unreasonable to suppose that the knowledge of tanning and dyeing skins which they then possessed had been acquired from the Egyptians; and so we find a similar system adopted by all the Eastern nations up to the present day—that is, the process called by us of the present day leather-dressing,—and employed particularly for the preparing and finishing of what is called Morocco leather. The very name implies its origin. The Greeks and Romans produced this description of leather in great abundance, as is proved by the writers of that day in describing the foot-gear of the wealthy. Athens excelled in the manufacture of dyed leather—purple and red, especially purple. The Moors and also the Turks were and are at the present day exceedingly skilful in the art of leather dressing.

I have seen an Eastern currier, a Turk, I believe, take a hog skin, and covering a slab of slate or marble with water, he strewed over it a sort of millet seed; then commenced, at first gently, to set the skin firmly upon the seeds; and having accomplished this, he then crushed them, as it were, into the skin; afterwards carefully taking it up, it was left to dry; when dry, the seeds were brushed off, and behold, in addition to the indentations, each partook of some shade of prismatic color. Shagreen leather, in the manufacture of which the Eastern nations excelled, received its peculiar impressions by similar means, only the seed employed was harder, and thus we have the initial method of pebbling. It is amusing to note the difference between the parent and the progeny, namely, the pebbling machine of the present day.

The probable improvements made by the Romans were doubtless utilitarian, inasmuch as during their northern conquests they would of course come among a people who, from sheer necessity, would have discovered a more serviceable covering for the feet than that in use among the nations of the East, and the Roman, with his knowledge of the arts, would to a certain extent remedy the defects. That the Romans knew much of the art of preserving and dressing leather may be inferred from the fact that Ovid and other writers make frequent mention of the covering for the feet and legs; thus we are told of the sandal of the soldier, attached to the leg by straps of leather.

In Europe, and in the British Isles especially, according to Cæsar, there was a great quantity of cattle; and furthermore we are informed that the natives sold the hides because they did not understand the art of tanning them. Therefore, when we find (a few years after the Roman conquest) the Britons employed in tanning operations along the banks of all the principal streams, we can come to no other conclusion than this — that the Romans taught them (the Britons and also the Irish) the art. In all probability their teachers were the early Christian Missionaries, or those enduring voluntary exile for the sake of religion, and we are supported in this hypothesis by the fact that the mountaineers of Wales, as also the people of Ireland, for many centuries monopolized the knowledge of the art of tanning and currying; also that the peculiar shaped shoe called by the Irish, brogue, and by the Britons clog or clogue, were similar in every respect to the *ocrea* of the Roman. Brogan leather, which is a sort of russet leather, unwhitened, evidently took its name from the brogue or brogan. The Saxons seem to have had very little knowledge of the art; indeed, we have no record that they knew it at all.

After the Norman conquest various articles are mentioned as being made of leather, among which are the cuirass, a sort of armor, worn by the warrior of that day, and certainly of Norman origin, as its name implies. In fact, the reputed father of William the Conqueror (if we may give any credence to the history of such a remote time) was a tanner. During the crusades there is abundant room for supposing that those who returned brought with them additional knowledge of the art of leather dressing, if not of tanning and currying; certain it is that the art, and, as it was also termed, mystery, of tanning and currying was conserved by the monks, as there were many towns in England that were founded by the monks; the ancient documents showing that they (the monks) were largely engaged in tanning and its auxiliary, currying, and doubtless considered it, as they described it, “ye art and mistirie,” although long after their time it took the manipulator five, and in some instances, seven years before leather was considered tanned, and yet I hear some persons state that we have made little improvement. I hold in my hand a piece of cow-hide tanned in six days. This is tanned after the formula of Professor Zippi, who unfortunately died in this country some months back, before he had made himself known.

Zippi's process is somewhat similar to that of Bordier's, the salt being a sub-sulphate of iron peroxidized, prepared from the proto-sulphate of the same metal, by digestion in diluted nitric and sulphuric acid. It is then diluted; hydrated peroxide of iron is used to strengthen it; it must be frequently stirred. Skins are tanned in this way in from three to six days, and hides from eight to twelve days. There are other processes where the skins are prepared in chrome

salt and afterwards in a sesqui-oxide of iron or peroxide. These are finished in bi-chromate of potash and alumina. Sulphate of potash has been recommended. I would prefer to use (if using salts metallic) the nitrate of sodium. The salt found in South America is preferable.

The combination tannages of England originated, I think, in the town of Warrington, and also in the neighborhood of Leeds. In Warrington the combination consisted of mixing potash and sulphuric acid together in the first liquors and finishing in *divi divi*, myrabolams and valonia. Vacuum tan-pits were also in use by some tanners of this place, which were, I think, eventually relinquished. At Joppa, in the vicinity of Leeds, the combination consisted of mixing *terra japonica* and sumac together in conjunction with sulphuric acid; the pelts which were chiefly E. I. kips, were also bated or drenched in a peculiar manner, the excrement of hogs being used as a drench, and before they were exposed to the action of the lime they were softened in an ammoniacal liquor made from nitre, blood, and the exuvia of dogs. There is to-day scarcely a pure oak-bark tannage in the country — all are combinations to a greater or less extent.

We will commence with the

LIMING PROCESS.

Calcium is found in prolific abundance in almost every part of the world; its uses are multifarious and the history of its usefulness is found in the oldest records — in the ruins of Pompeii as well as in the most recent buildings of modern times.

As a caustic alkali it has the property of decomposing every description of animal and vegetable fibre; it is this property that renders it so serviceable to the tanner, inasmuch as it attacks the fibre of the hide, whilst its alkaline character saponifies the fatty and nitrogenous matter, thereby setting free the ammonia, which in its affinity for sulphur attacks the hair bulbs and performs the depilatory process. It is soluble in water at about six hundred times its weight.

The anatomy of the hide, the general formation of the hide, consists of a network of fusiform cells, divided into distinct parts, called by the physiologists the epidermis or scurf skin, the cuticle or true skin, and the fibrous membrane; its chemical constituents are nitrogenous, with a modicum of sulphur. The latter is found principally in the hair; it may be described as gelatine, which is N. or nitrogen, fibrine, N. S., or nitrate of sulphur; hence when brought into contact with milk of lime, hydrogen forms an affinity with nitrogen and lime, hence ammonia, N. H. 3; this attacks sulphur and thus the desired result is obtained.

Old limes become Nitrate of Calcium, N. 05, and saponaceous, and as in this state it is very deleterious to the hide, you will therefore

avoid as much as possible the danger of allowing your limes to become too much saturated with nitrogenized matter; use only enough for the time; sulphur will always assist the lime. I would have made several experiments, only that I had not the apparatus. I propose the use of an apparatus for liming, such an one as I have had in private use for some time past.

DRENCHES.

The exuvia of fowls and reptiles yields upon exposure to a humid atmosphere oxylate of ammonia; in water, with considerable agitation, carbonate of ammonia; thus you perceive the intuitive process of agitating the drenches from time to time. The ammonia is taken up by the hide whilst the carbon is combined with the lime, forming carbonate of lime, or chalk, which is very injurious to the hide, and when in excess prevents the necessary reduction. The test for the presence of chalk is to take up in a glass some of the suspected impure drench and drop into it a few drops of acetic acid. Effervescence or foaming will indicate the presence of chalk. In large tanneries a quantity of air may be blown into the drench until the lime is precipitated, when the supernatant liquor of ammonia may be drawn off and used again with a small addition of excrement.

I have found that weak liquors, rich in acid produced by mucilaginous ferment are of great use in reducing the skin and expelling the lime. Baths of sulphurous acid are also as good (if properly managed) as drenches made from exuvia, especially if uric acid in proper proportions be held in intimate solution with the acid.

SWEATING PROCESS.

Sweat-houses are made, as you all know, by building a place almost air-tight, through which water or steam is caused to pass. H. is evolved, affinity for N. is disengaged and ammonia is formed, first from water vapor; 2 vols. H., 1 vol. O. form 2 vols. aqueous vapor, and 3 vols. of A. V. — 1 of N. form ammoniacal gas, and ammonia has a great affinity for sulphur, and the greatest quantity of sulphur is found in the mucous canal of the skin, consequently the roots of the hair are decomposed by the caustic action of ammonia, and thus depilation is secured. This method is not to be recommended for upper leather, as the fatty portion of the hide is not by this means sufficiently decomposed, and to use acids strong enough for the purpose would injure the texture of the skin, it being too thin. I have seen a few days since, in the tannery of Mr. Rawlston of Bertheu, a compound process. The lime-house is part a sweat-room; he uses sulphur in the limes; the hides are exposed to the action of the ammoniacal gas as well as the action of lime, and are limed very low. They use no

drenches. A very fair description of leather is the result. This process might (if improved) answer very well for hides intended for buff leather, because time is saved and the hide is rendered thicker for the splitting operation.

In tanning we have noticed the method of reducing the hide or skin employed by the Egyptian, the Arab, as also by the Indian of this country. The antiquity of the mode or method is beyond a question, as we find the process of smoking the hide resorted to by all of them as the final process, and this brings to my mind carbolic acid, since the creosote of smoke has the property of tanning the hide, and the two are so similar that it seems surprising any one should consider the use of carbolic acid in the light of a new discovery. I remember some years since, while experimenting on some sheepskins, my surprise at finding that picric acid had completely tanned some of them, upon which it (a diluted solution) had accidentally fallen. If I had known then as much as I afterwards learned in relation to picric or carbozotic acid, there would have been no occasion for surprise, since the formula for it is with little difference the formula of carbolic acid.

There is no doubt but that carbolic acid, if used in conjunction with a preparation similar to that adopted by the Egyptian, the Arab, and also the Indian of this country, would make an excellent description of soft leather, but it is decidedly injurious if used in combination with tannic acid. Indeed the French calfskins owe their peculiar softness to the method and the material employed, being somewhat similar in their character and effect upon the skin to that produced by the formula I have just mentioned; and here I would make a few remarks upon French tanning. The French tanners in general produce a very poor description of stock; true it is that in the neighborhood of Strasbourg, Nantes, Tours and Bordeaux, as also Paris, a superior article is produced, but until within a few years past the art of producing stock, known in this country as French calf, was confined to only a few men. In fact, so late as 1824, the art was entirely unknown to the French, they having been taught the mystery by some enterprising Irishmen who found their way there about that time. Before I leave the tanning department I would state that in sole leather too great care cannot be taken in properly semi-drying and oiling before rolling. Oil and water, together with a little rosin, should be mixed together and lightly spread over the surface of the hide before it is placed under the roller; this will give a better polish, a higher color, and at the same time tend to obviate the objectionable property of cracking, which I am sorry to see some sole leather possesses.

And now we will enter the .

CURRYING SHOP.

Here I would earnestly impress upon your minds the necessity there is, first, for careful shaving, or skiving, more especially for calf-skins; let the shoulders and shanks be left *full*; *take nothing off more than you can take off with the back of the knife*; so that there may be something left for the stuffing, without having the thin place disfigured by patches of oily supersaturation; be careful, also, not to dry them in the *sun*! I had forgotten to mention the scouring. Let everything be well scoured in water at about ninety degrees F., if you want weight, color and surface; do not grudge the labor of scouring upon both flesh and grain, and if any difference, let the flesh have the most of it. And now I must say a few words about the stuffing ingredients. I am afraid that I have already taken more than the time allotted for the lecture, and have thus suppressed some portion of it; nevertheless, I would state that we should endeavor to have the hide when converted into leather, as tough, as soft and as fine as it was before we deprived it of its fatty matter in order to render it *leather*. We must learn how to put back all the elements we deprived it of. Oil and tallow will not do this! The softness acquired in leather by saturation with stuffing is similar to the lubrication of the hinges of a door — it softens it and causes rough parts of the fibre to slip; it in fact lubricates it; but when it has evaporated, it leaves the hide as hard and as brittle as it was before it was stuffed at all.

In conclusion, gentlemen, I would say something about extracts and tanning materials, only that I am interested in the manufacture of extracts. Yet if there is any one here who feels interested in the same branch of industry, I shall be very happy to speak with him about it when the lecture is over. We have all the materials for manufacturing every description of leather as good as it can be made in any country in the world! I myself will undertake to tan and curry a skin with materials to be found in this country, equal to any goods produced in France. We have sumac, the quercus of every kind, and last, though not least, the *Abies Canadensis*, the hemlock tree! With the extract of this and sumach, we can produce leather worthy of the country, and I think that is saying a good deal. I do not want to travel this road alone, and I do not think a more appropriate place than this Salem can be found to commence classes for the study of chemistry in its application to tanning and currying. With this I will conclude, thanking you very much for your kind attention.

After the close of the lecture, remarks were made by several members, and a vote of thanks was passed to Mr. Maynard for his interesting and instructive lecture.

BULLETIN

ESSEX INSTITUTE,

VOLUME III,

1871.

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BULLETIN

OF THE

ESSEX INSTITUTE.

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REGULAR MEETING, MONDAY, JANUARY 2, 1871.

THE President in the chair. Records of preceding meeting read.

Dr. A. S. PACKARD, Jr., referring to the fine specimen of Triassic fossil fish *Catopterus gracilis* Redfield, presented this evening by Mr. Russell, stated that he had during the past autumn visited the locality at Sunderland, Mass., which is exposed at low water. The fine blackish slates were in nearly horizontal beds and the fish remains were quite abundant. At Turner's Falls, about ten miles north of Sunderland, he had visited a large and very complete collection of bird tracks belonging to Mr. T. M. Staughton. The collection included some fine fossil tracks, and plant and insect remains, the latter occurring in nodules at a locality three miles north of Turner's Falls. The insect remains were of one species of an aquatic larva, which had been referred to the Ephemerae by Dr. J. L. Leconte, and called *Palephemera mediæva*, by Hitchcock. On an examination of specimens showing well the head and extremity of the body, Dr. Packard thought they were rather aquatic coleopterous larvæ, belonging perhaps

near the family Heteroceridæ. Among the fossil plants were sprigs of a supposed coniferous tree, *Voltzia*, a characteristic Triassic plant in Europe.

Dr. Packard also gave an account of the discovery of organs of special sense in the abdominal appendages of *Chrysopila*, a fly allied to *Leptis*. He thought they were possibly olfactory organs, like those he had discovered in the jointed abdominal appendages of the cockroach. He referred to similar little sacs situated in the palpi of *Perla* next the mouth, and thought they were perhaps organs of smell.

Prof. A. E. VERRILL, of Yale College, gave a brief sketch of the marine fauna of Eastport, Me., and spoke of the unusually favorable opportunities for collecting.

MARINE FAUNA OF EASTPORT, ME.

Eastport Harbor is somewhat quadrangular in form, about one and a half miles wide and three long, partially bounded on the east and south by the Island of Campo Bello, which is about nine miles in length, and on the west by Moose Island, on which Eastport is situated, while on the north-east it is protected by Deer Island, Indian Island, and numerous smaller islands. It has four outlets. The largest and deepest is the broad channel between Campo Bello and Indian Island, which is 40 to 70 fathoms deep and communicates directly with the Bay of Fundy. In this channel the tides flow with great velocity and power, and the bottom is stony and ledgy throughout, in some cases consisting of smooth, nearly clean, round stones, like paving-stones, on which only a few Foraminifera, Bryozoa, Ascidians, and Actiniæ can maintain a permanent home. Between Deer Island and Indian Island on the east and Moose Island on the west, there is another broad and deep channel, in some places 50 to 60 fathoms deep, with a rough, rocky bottom. This channel is several miles in length and communicates with the Bay of St. Andrews at the mouth of the St. Croix River. This bay is about 15 miles across, and consequently an immense volume of water must pass through the channel during every ebb and flow of the tide, which produces so powerful a current that it is useless to attempt to row a boat of any kind against or across the current, except when it slacks near high or low water. Dredging in

this channel is somewhat difficult, on account of the swift current and rough bottom, and can hardly be attempted with safety when the tide is flowing with its full force. The fauna is, however, very remarkable as showing the influence of physical conditions on animal life, for here, at the depth of 40 to 60 fathoms, we dredged nearly the same assemblage of animals that are found on the opposite rocky shores, between high and low water mark, together with many of the same forms of sea-weeds. Among the more abundant species were *Mytilus edulis*, *Modiola modiolus*, *Mya arenaria*, *Saxicava arctica*, *Buccinum undulatum*, *Ascidia complanata* Fab. (*A. callosa* St.), *Cynthia pyri-formis*, *Boltenia reniformis*, various species of Bryozoa and Hydroids, *Ophiopholis aculeata*, *Asterias vulgaris*, *Cribrella sanguinolenta*, *Euryechinus Dröbachiensis*, *Pentacta frondosa*, *Cancer irroratus*, *Thelphusa circinnata* (*Lumara flava* St.), etc. There was, in fact, scarcely anything in the dredgings brought up from the deepest parts of this channel that would have indicated a depth of more than one or two fathoms below low water mark, along the shores, and most of the species can readily be obtained at low water of ordinary tides. This is doubtless due to the powerful current which rushes through the channel like a rapid river, and flowing over the rough and irregular bottom, completely mixes up the water from top to bottom, so that there is really no appreciable difference in the temperature or other conditions of the water of the bottom and surface. A third channel, which is narrower and quite shallow, connects the southern end of the harbor with the Bay of Fundy, passing between Campo Bello on the east and Treat's Island and Lubec on the west. This channel is sufficiently deep for the Boston steamers and large vessels at high water, but after half-tide is not safe except for small craft, and sometimes, at extremely low tides, it becomes nearly bare. The bottom is mostly muddy and soft. A fourth, narrow, but deep, rocky channel, passing between Treat's Island and the southern end of Moose Island, communicates with the extensive bodies of water known collectively as Cobscook Bay, but consisting, practically, of several distinct bays, or fiords, which have received local names. The southern branch, known as South Bay, was pretty fully explored with the dredge. These bays receive and discharge great volumes of water at every tide, nearly all of which passes into and through Eastport Harbor, and together with that which supplies St. Andrews Bay, it mostly comes in and goes out through the channel first described, between Campo Bello and Deer Island. As a result of this arrangement, Eastport Harbor is characterized by a powerful and somewhat complicated system of tides, which can be best understood by examining a chart of the harbor, with the soundings indicated, and comparing the respective channels to river valleys, when it will be found that, as a

matter of course, the most powerful currents will follow the deeper and broader channels, while the smaller and shallower channels will be tributary to them. Counter currents exist along the shores, and areas also exist where opposing currents meet or counteract each other, causing the water to be thrown into violent commotion, or else to be comparatively quiet, according to circumstances. At one point, in the central part of the harbor, we found a large bank, formed where the two principal tide-currents meet, consisting of a nearly uniform mass of comminuted shells and sand, which was almost destitute of life; but where the currents slack, or produce eddies, banks are formed which are very favorable for the development of a great variety of marine animals. Such a bank, covered by 10 to 15 fathoms of water, exists between Treat's Island and Friar's Head. This is composed of broken shells and gravel in most parts, and is a very rich dredging ground. Some of the most common and interesting species found here are *Alcyonium carneum*, *Urticina crassicornis*, in many beautiful varieties, *Astrophyton Agassizii*, *Ophioglypha Sarsii*, *O. robusta*, *Amphiura squamata*, *Asterias Stimpsonii*, and several other species, *Cribrella sanguinolenta*, of many colors, *Solaster endeca*, *Crossaster papposus*, *Pentacta frondosa*, a great variety of Hydroids and Bryozoa, *Terebratulina septentrionalis* (very abundant), *Cynthia pyri-formis*, *C. carnea*, etc., *Astarte undata*, *A. lens* (Stimp. Mss.), *Entalis striolata*, *Sipho Islandicus*, *S. pygmaeus*, *Scalaria Grönlandica*, *Acirsa Eschrichtii**, *Margarita undulata*, and many other interesting shells, with numerous worms and Crustacea. Nearer Campo Bello, towards Welch Pool, the bottom becomes muddy and abounds in mud-loving shells and worms. In the broad, shallow channel or bay west of Treat's Island, in 10 to 15 fathoms, a similar assemblage of animals is found, together with some additional ones of great interest. Among the species found here are *Acaulis primarius* St. (attached by a pedicle), *Pteraster militaris*, *Alcyonium rubiforme*, *Lucernaria quadricornis*, *Aphrodite aculeata* (very large), numerous Ascidians, *Pandalus annulicornis*, several species of *Hippolyte*, etc. Another very prolific bank of a similar kind, but composed of coarser gravel, broken shells, sponges, &c., is found at the entrance of South Bay, between Razor Island and the Lubec shore, in 8 to 10 fathoms of water; most of the species already mentioned (including *Pteraster*) are found here, together with numerous other species, many of which are ordinarily found only in much deeper water, showing that depth, of itself, has very little to do with the distribution of marine animals, and that temperature and other local conditions are the main causes which

* This species has not been recorded before from New England. It is not uncommon at Eastport.

affect them. Dredgings were also made in the Bay of Fundy, off the northern end of Campo Bello, where at the distance of four or five miles from Head Harbor, we reached the greatest depth which we could find anywhere within many miles of the shore. There appears to be at this place a depression of the bottom, or a valley somewhat parallel with Campo Bello, in which the depth is 100 to 125 fathoms, with a bottom of fine, soft, sticky mud and broken shells, in most parts. At this place we found *Alcyonium carneum*, *Astrophyton Agassizii*, *Ophiopholis aculeata*, *Ophioglypha Sarsii*, *O. robusta*, *Ophiacantha spinulosa*, *Terebratulina septentrionalis*, *Astarte lens*, *Pecten tenuicostatus*, *Aporrhais occidentalis*, etc. There were, however, very few species not to be found in 10 to 15 fathoms on the banks in Eastport Harbor. On a patch of hard bottom, near this place, in about 100 fathoms, we obtained a few rare and interesting species, among them a new species of a creeping Halcyonoid polyp allied to *Telesto* and *Cornularia*, with comparatively large, white tentacles. Farther out the water becomes shallower all the way to the "Wolves." Since the shores are diversified and the tides very extensive at Eastport (the extreme rise and fall of spring tides being about 28 feet), the opportunities for shore collecting are also excellent. The best localities for this are on the rocky shores at the southern end of Moose Island; north of the village at and near Dog Island; and also on Treat's Island and most of the other small islands in the vicinity; while many mud-loving creatures can be dug up from their burrows in the mud and sand on the extensive flats of Broad Cove, Prince's Cove and other localities. The number and variety of marine animals that can be collected at low water within a few minutes' walk of Eastport is really surprising to persons accustomed to collect on other parts of the coast. Even under and among the lofty wharves a very respectable collection may be made, including at least 200 species, and representing nearly all the classes.

Among the shore species are, of Radiata: *Urticina crassicornis* (mostly of the variety mottled with green and red), *Bunodes stella* (in crevices and under rocks), *Metridium marginatum*, *Edwardsia*, three species, *Peachia parasitica*, *Alcyonium carneum*, many Hydroids, *Ophiopholis aculeata*, *Ophioglypha robusta*, *Amphiura squamata*, *Astrophyton Agassizii* (young), *Asterias vulgaris*, *A. littoralis*, *A. Stimpsonii*, *Stephanasterias albula* V. (*Stimpson* sp.), *Cribrella sanguinolenta*, *Solaster endeca*, *Crossaster papposus* (rare), *Echinarachnius parma* (in sand), *Euryechinus Dröbachiensis* (very abundant on rocky shores at extreme low water), *Pentacta frondosa*, *Thyonidium productum*, rare, *Chirodota leve* (under stones, like the last), *Psolus phantapus*, young, adult rare, *Lophothuria Fabricii* (young common, adult rare, on ledges). Of the Mollusca: *Cynthia pyriformis*, *C. carnea*, *C. echinata*, *Molgula retortiformis* and several other species, *Ascidia complanata*, very abundant, *Cione*

tenella, *Boltenia reniformis*, and several other Ascidians, numerous Bryozoa, *Terebratulina septentrionalis*, a large number of bivalve and univalve shells, among which *Buccinum undulatum*, *Sipho Islandicus*, *Chrysodomus decemcostatus*, *Lunatia heros*, *Purpura lapillus*, *Chiton marmoreus*, *C. ruber*, and *C. albus*, *Mya truncata* and *M. arenaria*, *Saxicava arctica*, *Modiolaria nigra*, and *Pecten Islandicus* are conspicuous. Of Annelids and Nemerteans there are a large number of species, many of which have not yet been identified; among the most interesting of the former are *Nereis grandis* St., abundant and large, found in the mud of Broad Cove at low water, with many other species of *Nephtys*, *Spio*, etc., *Arenicola piscatorum*, living in the same way at Prince's Cove; *Thelphusa circinnata* forming coarse tubes under stones; *Myxicola Steenstrupii*, forming a loose, soft, jelly-like tube; a blood-red species of *Torquea* (?), remarkable for the brilliant blue phosphorescence of its numerous long tentacles; several fine species of *Sabella*, *Terebellidæ*, *Glycera*, *Eunice*, *Phyllodice*, *Lumbriconereis*, etc. Among the larger Crustacea are *Cancer irroratus*, *Crangon boreas*, *C. vulgaris*.

The harbor also abounds in Jelly-fishes and many other forms of pelagic animals. Of the former *Cyanea arctica*, *Aurelia flavidula*, *Oceania languida*, *Melicertum campanula*, *Staurophora laciniata*, *Bolina alata*, and *Idya roseola* are very abundant, while other species, such as *Callinema ornata* V., and *Mertensia ovum*, are occasionally seen. Night collecting would doubtless reveal many other species. Among the other pelagic forms are species of *Thysanopoda* and *Mysis*, known to the fishermen as "shrimp," which go in vast "schools" and are the favorite food of herring, young pollock, and other species of fishes, as well as of large flocks of gulls. We also saw, on one occasion, immense numbers of a species of *Sagitta*, besides many minute species of Entomostraca, etc. The fish-fauna is also rich and diversified. The principal fisheries in the vicinity of Eastport are, however, for the common herring (*Clupea elongata*), the hake, haddock, and pollock, while in deeper waters, outside, halibut and cod are also taken. During the time that I was at Eastport last summer, three large specimens of the basking shark (*Cetorhinus maximus*) were taken in the vicinity of Eastport and Lubec, having been left in shallow water by the ebbing tide. These were from 25 to 30 feet in length, and very thick in proportion, and were all males, as was a still larger one, about 35 feet long, caught near Eastport in 1868. This shark, although very powerful, is quite harmless and rather sluggish. The teeth are small and slender, shaped something like shoe-pegs, and the mouth and throat are comparatively small. The liver is very bulky and often yields two or three barrels of oil. Four or five other species of sharks are also not uncommon. The wolf-fish, *Anarrhicas vomerinus*, is frequent on the rocky shores, feeding largely on the sea-urchin (*Euryechinus Dröbachiensis*) and *Buccinum undulatum*.

The TREASURER reported an addition to the funds of sixteen hundred and fifty-four dollars and seventy-eight cents (\$1,654.78), one half of the net proceeds of a fair recently held for the benefit of the Salem Oratorio Society and Essex Institute, by the ladies of Salem, Beverly, Peabody, and other towns in the vicinity. The fair was held in Mechanic Hall, and was opened for the sale of useful and ornamental articles, on Monday evening, October 31, 1870,—and continued through Tuesday and Wednesday, and till 1 P. M. of Thursday. The managers were fortunate in being the first occupants of the hall since the enlargement and reconstruction. The convenience in its several appointments and the beautiful and appropriate decorations added much to the comfort of the managers and assistants, and to the general interest of the occasion. Five numbers of a paper entitled "To-Day," were issued, ably edited and finely printed, containing a full account, in detail, of the organization and proceedings, and also many interesting and valuable communications from the pens of some of our literary and scientific writers.

Several members offered appropriate remarks, and expressed their deep sense of gratitude to those ladies who so generously gave their services on this occasion which was so eminently successful.

The following resolutions were proposed and unanimously adopted.

Resolved, That the sincere and grateful thanks of the Essex Institute be presented to the Board of Management and all others who assisted in the Salem Oratorio and Essex Institute Fair, for the liberal contribution to its funds, reported by the Treasurer this evening.

Resolved, That the Treasurer be requested to communicate a copy of these resolutions to Mrs. E. D. Kimball, the President of the Board.

The following correspondence announced : —

U. S. Dept. of Interior, Dec.; New York Secretary of State, Dec. 21, 24; New York State Library, Dec. 21; Alnwick, Berwickshire Naturalists' Field Club, Oct. 10; Berne, Naturforschende Gesellschaft, Nov., 1869 and Aug., 1870; Cambridge, Corporation of Harvard College, Nov. 28; London, British Archæological Association, Dec. 6, Geological Society, Dec; St. Petersburg, Société Entomologique de Russie, Oct. 6; Zurich, Naturforschende Gesellschaft, May 10; Hamlin, Robert D., Bennington, Vt., Dec. 20; Higginson, Thos. Wentworth, Newport, R. I., Dec. 27; Hotchkiss, Frank E., New Haven, Conn., Dec. 21; Perry, William Stevens, Geneva, N. Y., Dec. 14, 20.

The following additions to the Library reported : —

Historical Papers of the Church in Virginia edited by William Stevens Perry, 1 vol. 4to, privately printed, 1870. Connecticut Church Documents, edited by Francis L. Hawks and William S. Perry, 2 vols., 8vo, New York, 1863-4; Documentary History of the Protestant Episcopal Church in Vermont, 1 vol., 8vo, New York, 1870; Debates of the House of Deputies in the General Convention of Protestant Episcopal Church, 1868, 1 vol., 4to, Hartford, 1868; Reports of General and Diocesan Conventions and various other publications; 11 volumes and 146 pamphlets.

By Donation.

U. S. DEPT. OF THE INTERIOR. Documents 3d Sess. 40th Cong., 28 volumes.
U. S. TREASURY DEPARTMENT, Finance Report for 1870, 1 vol. 8vo.
HARVARD COLLEGE. Treasurer's Statement, 1870, 8vo pamph.
BUTLER, B. F., M. C. Drake's Speech in U. S. Sen., Dec. 16, 1870.
COLE, Mrs. NANCY D. File of the Salem Gazette for 1870.
GREEN, S. A., of Boston. Miscellaneous pamphlets, 75.
HART, CHARLES H., of Philadelphia. A Necrological Notice of the Hon. R. S. Field, LL. D., of Princeton, N. J., Oct. 6, 1870.
HOTCHKISS, FRANK E., of New Haven. Year Book of the City of New Haven for 1870.
LEE, JOHN C. Commercial Bulletin for Dec. 24, 1870.
PALFRAY, CHARLES W. Miscellaneous pamphlets, 40.
STICKNEY, MISS LUCY W. Cincinnati Directories for 1855, '59, '67, 3 vols. 8vo.
SUMNER, CHARLES, U. S. S. Report of the Commissioner of Agriculture for 1869, 1 vol. 8vo. Acts and Resolutions of U. S., 1 vol. 8vo, 1870. Message and Documents, 4 vols. 8vo. Paraguayan Investigation, 1870, 1 vol. 8vo.
TATE, GEO., of Alnwick, England. The History of Alnwick, Vol. ii., Parts 1 and 2, 1868-69, 2 vols. 8vo. Proceedings of the Berwickshire Naturalists' Club, 1837, '54, '62, '63, '64, '65, '66, '67, '68, '69, 8vo.
WATERS, J. LINTON, of Chicago, Ill. The Press, Jan. 1, 1871.

By Exchange.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings of, Vol. xiii, Sigs. 20, 21.
LEEDS PHILOSOPHICAL AND LITERARY SOCIETY. Report of the Council, May 4th, 1870, 8vo, Leeds, 1870.
BERNE, NATURFORSCHENDE GESELLSCHAFT. Mittheilungen aus dem Jahre, 1869, 8vo.
ZÜRICH, NATURFORSCHENDE GESELLSCHAFT. Vierteljahrsschrift Redigirt von Dr. Rudolf Wolf. Vierzehnter Jahrgang, 1869, 1 vol. 8vo.

MOSCOU, SOCIÉTÉ IMPÉRIALE DES NATURALISTES. Bulletin Année, 1870, No. 1, 8vo pamph.

PUBLISHERS. Christian World. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Literary World. Little Giant. Lynn Semi-Weekly Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quaritch's Catalogue. Salem Observer. Silliman's Journal. Sothran's Catalogue.

Augustus P. Hamblet of Salem, was elected a resident member.



REGULAR MEETING, MONDAY, January 16, 1871.

The President in the chair. Records of preceding meeting read.

Mr. JAMES KIMBALL read an interesting communication on the early MILLS in this vicinity, which contained many citations from the records and affidavits on file in the county offices of Essex.

In the formation of a new settlement, attention is immediately directed to secure a regular and sufficient supply of bread stuffs, and every facility in that direction is regarded of the highest importance; hence the erection of Grist Mills is necessarily the first movement in the introduction of the manufacturing industries. It appears, therefrom, that within four years from the landing of Roger Conant and his companions, and two after the arrival of Endicott, Capt. William Trask, one of the original planters, was the first person who applied our water power to economic use, in the erection of a mill, on a small brook running into the North River, near the crossing of the highway in the vicinity of the Railroad Station in Peabody, called Gardner's Brook. Here upon the narrow outlet of this stream a rude dam was constructed of logs with a power only sufficient for the most

primitive kind of mill. The first machinery was for pounding or beating corn, a mortar mill, as it was afterwards called.

Various changes were made at different times in the construction and uses of the building or buildings on this foundation; in 1692 it was rebuilt for a Fulling Mill—several mills of this character were erected on the small streams in this county during the colonial and provincial periods in our history. It further appears, that, at an early date, several families located in this neighborhood, which was considered a desirable place for a settlement, hence the necessity of erecting and maintaining the bridge at the "Town's End," alluded to in the records of that period. In 1640, Capt. Traske* obtained permission, and some years after erected a mill about half of a mile lower down the river, and opposite his house (in the rear of 158 Boston street); not liking that place, in a short time, he moved it again half of a mile further down, making it one mile from the location of the first mill. This was used by himself and his descendants for many years, when it passed into other hands. During the latter part of the last and the first half of the present century it was under the direction of William Frye, father and son, and was familiarly known as "Frye's Mills."

July 12, 1633, a grant was made by the town of Lynn to Edward Tomlins for a mill; this was the second in this colony, and was erected on Strawberry brook, flowing from Flax Pond, a few rods west of the junction of Franklin with Boston Street. In 1663, 6 mo. 22, per-

* Capt. William Trask was born in Somersetshire, England, probably in 1587, died in 1666. The house which he built and in which he resided, was situated a few rods in the rear of the present old mansion, No. 158 Boston Street. The present house was built by his son, about 1680. This is the only part of the original estate that is now and has been owned by members of the family in successive generations.

mission was granted to Walter Price, Henry Bartholemew, John and Samuel Gardner, for building a mill on the South River near Mr. Ruck's. This "New Mill" was completed in 1664, and in 1666 the town incorporated this dam into the public travelled way and continued it from the Mill Dam through the South Fields to the little gate in the fence, where it joined the old road to Marblehead. This was on the site of the "South Mills," so called, and now occupied by the Eastern Railroad company for the new Engine House. The town in remuneration for the injury done to the Pickerings (John and Jonathan) by the erection of the dam, and the laying out of the way over the same, which run through their shipyard, granted them a site at the Town's End, or in Hardie's Cove, if they should find it most convenient.

A general discussion followed the reading of the paper, participated in by Messrs. W. P. Upham, James Kimball, the chair, and others. Several suggestions were made having a reference to the subject of priority of the different mills; allusion being made to Saltonstall's Mill in Ipswich, granted in 1635; a description also was given of the early mode of grinding, probably on the principle of the trip hammer, the use of stones having been introduced at a later date. The building of various mill dams and bridges in this vicinity, that of the North Bridge in 1764, was specified. A vote of thanks was passed to Mr. Kimball for his interesting and valuable communication and he was requested to prepare the same for publication in the "Historical Collections."

The Secretary read the following correspondence :—

William S. Elwell, Springfield, Jan. 10; Frank E. Hotchkiss, New Haven, Dec. 30; William Stevens Perry, Geneva, N. Y., Dec. 28, Jan. 7; Geo. Henry Preble, Charlestown, Jan. 14.

The Librarian announced the following additions :—

NATURAL HISTORY OF NEW YORK. Palæontology, vol. 3, pts. 1 and 2; vol. 4; 3 vols. 4to; Albany, 1864, '67.

By Donation.

BUTLER, BENJ. F., M. C. Report of the Department of Agriculture for Nov. and Dec., 1870. Bingham's speech in U. S. H. R., Dec. 20, 1870.

FOOTE, CALEB. Files of several County Papers for 1870.

GREEN, S. A., of Boston. Three pamphlets.

KIMBALL, JAMES. Rules of the Supreme Court of Mass. for 1870, 1 vol. 12mo. Eulogies on Gulian C. Verplanck, 1 vol. 8vo.

LEE, FRANCIS H. Boston Directory for 1865. Bombay Directory for 1863.

LEE, JOHN C. Commercial Bulletin for Dec., 1870, Jan. 7, 1871.

ROPES, NATH'L. A description of Types, 12mo pamph.

SUMNER, CHARLES, U. S. S. Report of the Dep. of Agriculture for Nov. and Dec., 1870.

WATERS, J. LINTON, of Chicago, Ill. Four pamphlets.

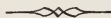
By Exchange.

AMERICAN ANTIQUARIAN SOCIETY. Proceedings at Annual Meeting, Oct., 1870.

BOSTON NUMISMATIC SOCIETY. American Journal of Numismatics Jan., 1871.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. The New England Hist. Geneal. Register, Jan., 1871.

PUBLISHERS. American Literary Gazette. American Naturalist. Essex Banner. Gardeners' Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Little Giant. Lynn Semi-Weekly Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quaritch's Catalogue. Salem Observer. Sotheran's Catalogue.



DEFICIENCIES IN THE LIBRARY.

It is intended from time to time, to publish lists of deficiencies in the Library, hoping that the friends of the Institute, who may notice the same, will be induced to aid in completing the sets. Any number or volume, not designated (within brackets) under any title, will be acceptable.

DEFICIENCIES IN DIRECTORIES.

[Continued from volume ii, page 128.]

CARTHAGE, N. Y., by J. C. Kimball [1867-8].

CAYUGA COUNTY, N. Y., by H. Child [1867-8].

CHEMUNG and SCHUYLER COUNTIES, N. Y., by H. Child [1868-9].

CHENANGO COUNTY, N. Y., by H. Child [1869-70].

CORTLAND COUNTY, N. Y., by H. Child [1869].

ELMIRA, N. Y., by W. H. Boyd [1860].

FISHKILL LANDING, N. Y. [1864-5].

GENESSEE COUNTY, by H. Child [1869-70].

HUDSON, N. Y., by Parmenter & Van Antwerp [1851-2]; by H. Wilson [1856-7]; by W. V. Hackett [1862-3].

JEFFERSON COUNTY, N. Y., by H. Child [1860 and 1861].

KINGSTON & RONDOUT, N. Y., by Fitzgerald, Webb & Co. [1866].

LOWVILLE, N. Y., by J. C. Kimball [1867-8].

NEW YORK, N. Y., by David Franks [1786, reprint]; by David Longworth [1796-7, 1799-1800, 1809-10]; by Thomas Longworth [1825-6, 1826-7, 1827-8, 1831-2, 1832-3, 1833-4, 1834-5, 1835-6, 1838-9, 1839-40, 1840-1, 1842-3]; by John Doggett [1841-2, 1842-3, 1843-4, 1844-5, 1845-6, 1846-7, 1847-8, 1848-9, 1849-50, 1850-1]; by Charles R. Rode [1850-51]; by Doggett & Rode [1851-2]; by C. R. Rode [1852-3, 1853-4, 1854-5]; by H. Wilson [1852-3, 1853-4, 1854-5, 1855-6, 1856-7, 1857-8, 1858-9, 1859-60, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867]; Business Directory, by H. Wilson [1862-3, 1866-7, 1853-4].

NIAGARA COUNTY, N. Y., by H. Child [1869].

ONEIDA COUNTY, N. Y., by A. Boyd [1862-3]; by Waite Brothers & Co. [1866-7]; by H. Child [1869].

ONONDAGA COUNTY, N. Y., by H. Child [1868-9].

ORLEANS COUNTY, N. Y., by H. Child [1869].

OSWEGO, N. Y., by W. Hancock [1856-7]; by John Fitzgerald [1861, 1864-5].

POTSDAM, N. Y., by J. C. Kimball [1668].

POUGHKEEPSIE, N. Y., by J. Underhill [1856-7]; by David B. Lent, Jr. [1859-60]; P. & Fishkill Landing [1864-5].

RENSSELAER COUNTY, N. Y., by H. Child [1870-1].

ROCHESTER, N. Y., by Elwood & Dewey [1844]; by Jerome & Brother [1847-8]; by D. M. Dewey [1853-4, 1855-6]; by Curtis, Butts & Co. [1861].

ROME, N. Y., by W. H. Boyd [1857, 1859-60].

SARATOGA SPRINGS, N. Y., by A. Boyd [1868-9].

SCHENECTADY, N. Y., by H. Y. Bradt & Co [1864]; by W. H. Boyd [1857]; by H. Y. Bradt [1862-3].

TOMPKINS COUNTY, N. Y., by H. Child [1868].

TROY, N. Y., by John F. Prescott [1850-1]; by George Adams [1857]; by Adams, Sampson & Co [1858, 1859, 1860, 1861, 1862].

SYRACUSE, N. Y., by W. H. Boyd [1857]; Daily Journal [1862-3, 1864-5, 1866-7]; by Andrew Boyd [1868-9, 1869-70].

WATERTOWN, N. Y., by J. P. Fitch [1840].

WAYNE COUNTY, N. Y., by H. Child [1867-8].

WYOMING COUNTY, N. Y., by H. Child [1870-71].

PUBLICATIONS OF THE ESSEX INSTITUTE. 1871.

JOURNAL OF THE ESSEX COUNTY NATURAL HISTORY SOCIETY. 1 vol.

8vo. 1836-1852. pp. 135. In paper,	\$0 50
Bound,	1 00

PROCEEDINGS AND COMMUNICATIONS. 8vo. 6 vols. 1848-1868. [The Proceedings close with the sixth volume.] The series, in numbers,

Bound in cloth,	24 00
Vol. I. 1848-1856. pp. 275,	2 00
" II. 1856-1858. pp. 438, 1 plate,	2 00
" III. 1858-1863. pp. 301,	2 00
" IV. 1864-1865. pp. 448, 15 plates,	5 00
" V. 1866-1867. pp. 569, 4 " and <i>Naturalists' Directory</i> ,	6 00
" VI. 1868-1871. pp. 259, 2 plates and 31 cuts,	3 00

[These volumes contain a large number of descriptions and figures of new species, especially of Corals, Insects and Polyzoa; and many valuable papers on Natural History. The first three volumes also contain many important Historical papers. In addition to the papers on special subjects, the volumes contain the proceedings of the meetings of the Institute, the records of additions to the library and museum, and many important verbal communications made at the meetings, etc. The *Naturalists' Directory* is also issued under the same cover with vols. IV. and V. Vol. VI. closes the series.]

BULLETIN. 8vo. Issued in monthly parts of about 16 pages each.

Subscription per annum,	1 00
Single numbers,	10
Vol. I. 1869. pp. 164,	1 00
" II. 1870. pp. 178,	1 00
" III. 1871. Subscription,	1 00

[The *Bulletin* takes the place of the *Proceedings of the Institute* which close at the date of the commencement of the *Bulletin*. This publication will contain all the short communications of general interest, both of an Historical and Scientific character, made at the meetings of the Institute. and the record of the meetings and business of the Institute. Occasional lists of the deficiencies in the library of the Institute, and of the duplicate books offered for sale or exchange will also be given.]

NATURALISTS' DIRECTORY. Issued with Proceedings Vol. V, 1867. . . .

[This work contains the addresses and departments of study of the Naturalists, Collectors and Taxidermists, in North America at the date of publication.]

Separate from Proceedings, paper covers, \$1 00
 " " " bound and interleaved, 2 00

HISTORICAL COLLECTIONS. First series, Vols. 1-8, small 4to,

" " Second series in 8vo, commencing with Vol. 9,

The 10 vols. in paper covers, 20 00
 " 10 " " cloth binding, 30 00
 Vol. I. 1859. pp. 206. Steel plate, 3 00
 " II. 1860. pp. 310, 3 00
 " III. 1861. pp. 298, 3 00
 " IV. 1862. pp. 289, 3 00
 " V. 1863. pp. 289. Steel plate, 3 00
 " VI. 1864. pp. 274, 3 00
 " VII. 1865. pp. 287, 3 00
 " VIII. 1866. pp. 267, 3 00
 " IX. 1868-9. (Vol. 1 of 2d series. 8vo.) pp. 374, 3 00
 " X. 1869-70. pp. 319. Steel plate, 3 00
 " XI. 1871. Subscription, 3 00

The *Historical Collections* contain papers wholly of an Historical and Genealogical nature, and are most valuable to the student of early American History. Many important manuscripts and public and private early records are printed in these volumes for the first time, as well as papers specially prepared on topics relating to the early history of Massachusetts. Several Genealogies of leading families connected with the early settlement of the country are also contained in the volumes.]

THE WEAL-REAF. Published for Institute fair in 1860. Small 4to. pp. 56, 30

TO-DAY. Published for the Institute and Oratorio fair, 1870. pp. 38, . . . 50

Besides the above publications, the following works are offered for sale :

ALLEN, J. F. Victoria Regia, or the Great Water Lily of America. Royal folio, six colored plates, 1854, 10 00
 ALLEN, J. A. Foray of a colony of Formica Sanguinea upon a colony of Black Ants. 1868,* 10
 BALCH, D. M. On the Sodalite at Salem. 1864,* 10
 BALCH, D. M. Analysis of Grapes. 1865,* 10
 BRIGGS, G. W. Memoir of D. A. White. Pamphlet, 8vo, 1864,* . . . 30
 COUES, ELLIOTT. List of the Birds of New England, with critical notes. Pamphlet, 8vo, 1868,* 75

DERBY, PERLEY. Hutchinson Family. 1 vol, 8vo. 1870,*	\$2 00
ENDICOTT, C. M. Account of Leslie's Retreat. Pamphlet, 8vo, 1856,	25
ENDICOTT, C. M. Account of the Piracy of the ship Friendship of Salem in 1831. Pamphlet, 8vo, 1858,*	15
ESSEX INSTITUTE. Historical notice of, with the Constitution, By-Laws, and lists of the Officers and Members. Pamphlet, 8vo, 1866,	25
FOWLER, S. P. Account of the Life, Character, etc., of Rev. Samuel Parris, and of his connection with the Witchcraft Delusion of 1692. Pamphlet, 8vo, 1857,*	15
GILL, T. Prodrome of a Monograph of the Pinnipedes (seals). 1866,*	25
HYATT, A. Observations on Fresh-water Polyzoa. 103 pages, 9 Plates and 25 Cuts, 8vo, 1868,*	2 50
KIMBALL'S Journey to the West in 1817. Pamphlet, 8vo,*	15
MCILWRAITH, T. List of Birds of Hamilton, Canada West. Pamphlet, 8vo, 1866,*	15
PLUMMER HALL, Dedication of. Pamphlet, 8vo, 1857,	30
PREBLE, GEORGE HENRY. The First Cruise of the United States Frigate Essex. Pamphlet, 8vo,*	1 00
PUTNAM'S and PACKARD'S Notes on Humble Bees, etc. Wild Bees of New England, their Parasites, etc., with a plate. Pamphlet, 8vo, 1865,*	75
SALEM, Town Records of. 1634 to 1659. 8vo, 1868,*	2 50
SHURTLEFF, C. A. Report on the Army Worm. 1862,*	10
STREETER, G. L. Account of the Newspapers and other Periodicals pub- lished in Salem. Pamphlet, 8vo, 1856,*	15
UPHAM, C. W. Memoir of Francis Peabody. Pamphlet, 8vo, 1869,*	50
UPHAM, C. W. Memoir of D. P. King. Pamphlet, 8vo, 1869,*	30
UPHAM, W. P. Memoir of Gen. John Glover of Marblehead. Pamphlet, 8vo 1863,*	50
WEINLAND, D. F. Egg Tooth of Snakes and Lizards. Pamphlet, 8vo, with a plate, 1857,*	15
WHEATLAND, H. Notice of the Pope Family. Pamphlet, 8vo, 1867,*	25
WHITE, D. A. Covenant of the First Church. Pamphlet, 8vo, 1856,*	10
WHITE, D. A. New England Congregationalism. 1 Vol. 8vo, 1861,	1 00
WILDER, B. G. Researches and experiments on Spider's silk. 1866. Cuts,*	50
WOOD, HORATIO C. Phalangeæ of United States. 1868. Cuts of most of the species,*	1 50

*Those marked with a star are extra copies from the Proceedings and Historical Collections.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., FEBRUARY, 1871: No. 2.
One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, FEBRUARY 6, 1871.

THE President in the chair. Records of preceding meeting read.

MR. JAMES H. EMERTON read a paper on the *Flying Spiders*, illustrating his remarks by drawings on the black-board.

Some spiders, he said, have a habit of rising into the atmosphere by the help of currents of air acting upon threads of cobweb attached to their bodies. The threads before rising are often tangled together, covering the grass and bushes, and floating in the air in large pieces.

In Europe large flights of this web often take place, particularly in the fall of the year. The web rises usually in the morning, when the weather is clear and calm, and descends again in the afternoon, as the day becomes cooler.

Travellers on the coast of South America have several times seen the rigging of their vessels covered with cobwebs, blown off from the shore. Mr. Darwin, in his journal of the voyage of the *Beagle*, gives an account of



a case of this kind when the vessel was sixty miles from land. A letter from an officer on one of the U. S. vessels, says that last autumn, when near Montevideo, after a wind, the rigging was filled with cobwebs, and little spiders fell down all over the deck.

In our own country such showers have seldom been noticed, although the bushes and grass are often covered with web, which float out in the air to the length of several feet. One calm, warm morning in June, 1858, I was watching some little spiders, about one-tenth of an inch long, on the top of a fence in Bridge street, Salem. Occasionally one would stop and turn up its abdomen, at the same time straightening up its legs as if to get as high as possible. A thread then passed upward from the spinnerets at the end of the abdomen, increasing in a few seconds to a yard in length, when the spider and thread rose slowly upward, until the thread was entangled in the branches of the trees above. Mr. R. P. Whitfield tells me that once, near Utica, N. Y., while crossing a field of stubble, he saw a multitude of spiders running up and down the stalks, and when they found one to suit them, letting a thread pass upward from their bodies, and when enough had passed, rising with it into the air. Most experiments tend to show that currents of air are the cause of the spinning of these threads, but others have believed that they could be better accounted for on electrical principles. Some also have believed that the spiders can fly without the help of web or currents of air.

The President read a communication from Mr. M. A. STICKNEY, "on *Nathaniel Ames and his Almanacs*."

The almanac, one of the first productions of the New England press (1639), always held a prominent place among the essentials of a New England home in the

olden times, and was the usual appendage to the large fire-places, around which cluster so many pleasing associations. These annual sheets being sewed together and thus preserved with scrupulous care, in a continuous series, formed a diary of the domestic circle. On the margin of the pages, or on the inserted leaves, were frequently noted the principal events of the family, sometimes of the neighborhood, and occasionally those of a more general interest.

The small number of these old memorials that have escaped from the ravages of time, are considered very valuable by the antiquary and the student of local history. From these time-worn and dingy leaves many important facts may be gleaned, or at least a careful perusal will not be time misspent.

Mr. Stickney commenced some thirty years since to preserve almanacs, and has been very successful in his efforts in this direction. His collection is very extensive, and several of the series are perfect and in good condition. From the abundant resources at his command, he has been enabled to prepare a series of valuable and interesting articles on almanacs and their authors. Four numbers have been printed in Vol. VIII of the "Historical Collections of the Institute;" others are in preparation.

1. Nathaniel Low, 1762 to 1827, inclusive (none printed in 1766), sixty-four numbers. Mr. Low, the eldest child of Nathaniel and Sarah Low, was born in Ipswich, Dec. 23, 1740 (O. S.). He was a physician, and settled at Berwick, Me., continuing there the publication of the almanacs which he had commenced at Ipswich, in 1762. These almanacs may be considered one of the most important series ever published in New England, both on account of the period in which they were issued, that of the Revolution, and for the number of

years they were printed. After his decease in September, 1808, this publication was continued by his son, Nathaniel.

2. Amos Pope was born Feb. 22, 1771, in the first Parish of Danvers. He was the son of Nathaniel and Mary (Swinnerton) Pope, and his ancestors were among the first settlers of Salem. At the age of twenty he undertook to prepare an almanac for the year 1792, which under great disadvantages he accomplished. He also prepared almanacs for 1793, 1794, 1795, 1796, and 1797, these were all printed except the one for 1796. After 1797, with the exception of a few winters devoted to school keeping, he resided upon the ancestral farm, where he died January 26, 1837.

3. Samuel Hall, son of Jonathan and Anna (Fowle) Hall, was born in Medford, Mass., Nov. 2, 1740. In 1768 he was persuaded by Capt. Richard Derby to remove to Salem, and under the patronage of the Derbys, and other patriotic citizens, established the *Essex Gazette*; the first number was issued Aug. 2d of that year;—the first paper in Salem. He printed the *Essex Almanac* from 1769 to 1773, inclusive. He removed to Cambridge in 1775, and soon afterwards to Boston. He returned to Salem in 1781 and commenced printing the *Salem Gazette*, and in 1785 he again removed to Boston, where he died, Oct. 30, 1807.

4. Daniel George, of Haverhill, 1776 to 1787, inclusive, except for 1785; none printed that year. He removed from Haverhill to Falmouth (now Portland), Me., previous to 1783 and was the publisher there, for a time, of the *Gazette of Maine*. He died suddenly, Feb. 4, 1804, aged 45.

This communication, the fifth in the series, contains a brief notice of Nathaniel Ames and his series of alma-

nacs of thirty-eight successive years, with extracts from the different issues and the various jottings on the margins and interleaved pages, the whole forming a valuable contribution to our local history.

Nathaniel Ames was born at Bridgewater, July 22, 1708, he was the son of Nathaniel, grandson of John, and great grandson of William, the immigrant ancestor, born at Bruton, Somersetshire, England, Oct. 6, 1605, and settled in Braintree, Mass., as early as 1640. He was a distinguished physician and mathematician, and removed to Dedham in 1732. At the age of seventeen he calculated his first almanac, which was published in 1726. His almanacs were superior to those of his contemporaries, and obtained a great circulation; 60,000 were annually sold in the New England colonies. He died July 11, 1764. The almanacs were continued for several years by his son Nathaniel, a graduate of Harvard in 1761, a physician, and died at Dedham in 1822. The celebrated Fisher Ames "one of the most brilliant men this country ever produced," was his third son, born April 9, 1758, graduated at Harvard 1774, and died July 4, 1808. "In the old church yard at Dedham, is a plain white monument, on which is the simple inscription FISHER AMES."

This communication was referred to the Publication Committee, and will probably be printed in the "Historical Collections."

The Secretary announced the following correspondence : —

From New England Historic-Genealogical Society, Feb. 2; Pennsylvania Historical Society, Feb. 2; Thronhjelm Kongelige Norske Videnskabernes-selskab, Sept. 28, 1870; Boardman, S. L., Augusta, Me., Jan. 25; Brigham, W. T., Boston, Jan. 25; Hotchkiss, Frank E., New Haven, Conn., Jan. 17, 23; Mann, Mary, Cambridge, Dec. 4, 1870; Paine, N., Worcester, Jan. 24, 25, 28; Preble, George Henry, Charlestown, Dec. 18, Jan. 31; Perry, Wm. Stevens, Geneva, N. Y., Jan. 20; Stephens, Wm. Hudson, Copenhagen, N. Y., Jan. 27; Trippe, T. Martin, Alexandria, Minn., Dec. 30; Williams, N. M., Methuen, Jan. 26.

THE LIBRARIAN announced the following additions.

By Donation.

BUTLER, BENJ. F., M. C. Kelly's Speech in U. S. H. R., Jan. 10, 1871. Maynard's Speech in U. S. H. R., Dec. 15, 1870. 8vo.

CLOUTMAN, W. R., of Charleston, S. C. Memorial Addresses on Wm. Pitt Fessenden, Dec. 11, 1869. 1 vol., small 4to.

DODGE, ALLEN W. Regulations of Foreign and Domestic Commerce. 1 vol. 8vo. Miscellaneous pamphlets, 20.

GREEN, S. A., of Boston. The Tariff Question, by E. B. Bigelow, 1 vol. large 4to. Miscellaneous pamphlets, 17.

HOLDEN, N. J. Massachusetts Legislative Doc. for 1865. Miscellaneous pamphlets, 75.

HUNTINGTON, A. Five pamphlets.

KIMBALL, JAMES. Three pamphlets.

LEE, JOHN C. Commercial Bulletin. Jan'y, 1871.

STONE, JOHN O., of New York. Report of the Metropolitan Board of Health for 1869. 1 vol. 8vo.

SUMNER, CHARLES. U. S. S., U. S. Coast Survey for 1867. 1 vol. 4to.

PALFRAY, C. W. The Manufacturer and Builder for March, April, 1870. Files of the Philadelphia Inquirer for 1866-7-8-9-70. Files of the Commonwealth, 1866 to 1870.

PEABODY, JOHN P. The Fireside Favorite for 1870.

PEABODY, S. E. Littell's Living Age from 1849 to 1869 inclusive.

ROPES, WM. L., of Andover. Catalogue of Andover Theological Seminary, 1870-71, 8vo.

WALKER, FRANCIS. Characters of undescribed Lepidoptera Heterocera, 8vo, 1869.

WATERS, J. LINTON, of Chicago, Ill. Message of John M. Palmer, Gov. for Ill., Jan. 4, 1871.

By Exchange.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles, Nouvelle Période. Tome Trente-huitième (38) Nos. 151-2-3-4-5, 8vo. Genève, Lausanna. Paris. 1870.

BOSTON PUBLIC LIBRARY, Bulletin for Jan., 1871.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings. Vol. xiii, sigs. 22, 23, 1870.

ENTOMOLOGICAL SOCIETY OF RUSSIA. Horæ Societatis Entomologicæ Russicæ. Tome VI, No. 4, Tome VII, Nos. 1, 2, 3, Tome VIII, No. 1, 8vo, Petropoli, 1870.

HARVARD COLLEGE, Annual Report of the President. 1869-70.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. Annual Catalogue of the Officers and students, 1870-71, 8vo.

BOSTON MERCANTILE LIBRARY ASSOCIATION. Index to the Catalogue of books, 1 vol., small 4to, 1869.

NEUCHÂTEL SOCIÉTÉ DES SCIENCES NATURELLES. Bulletin, Tome VIII. 1870. 8vo.

SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY. Proceedings for 1868-9. Vol. XV. 8vo. Taunton, 1870.

PUBLISHERS. American Literary Gazette. Canadian Naturalist. Christian World. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. National Farmer. Nature. Peabody Press. Quaritch's Catalogue. Sailors' Magazine. Salem Observer. Silliman's Journal.

Among the donations to the Department of Manuscripts, the following may be specified as a donation from Mrs. N. D. Cole.

PERMIT Mr. Jonathan Cole to pass on or before Sunday next out of Quebec, and on or before Thursday next out of the District, with his wearing apparel, Bedding, and a case and small keg of Liquor, without hindrance or molestation, he behaving as besemeth.

Given under my hand & seal at
[Seal] Quebec this 24th Novem'r 1775

By His Excellency's
command

H. T. BRASMAHE.

Camp before Quebec May 2, 1776. Received of John Peirce Jun., Esq., assistant Paymaster for the Northern Department by the hands of Mr. Jonathan Cole the sum of twenty-five Thousand Dollars, for which sum I promise to account with the Paymaster General on settlement.

JOHN WINSLOW, Assistant Paymaster.

25,000 Dollars.

PERMIT the bearer Jonathan Cole to pass from home to Boston on his lawful Business.

Head Quarters

Montreal 10th May 1776

To all concerned.

B. ARNOLD B. Gen.

Mrs. Edward D. Kimball was elected a resident member. Adjourned.



REGULAR MEETING, MONDAY, FEBRUARY 20, 1871.

The President in the chair. The Records of the preceding meeting were read.

The SECRETARY announced the following correspondence.

From Boston Public Library, Feb. 7; Hall, B. H., Troy, N. Y., Feb. 9; Hotchkiss, Frank E., New Haven, Feb. 7, 18; Norton, Charles, Janesville, Wisconsin, Feb. 4; Tracy, C. M., Lynn, Feb. 11; Verrill, A. E., New Haven, Feb. 15.

The LIBRARIAN reported the following additions.

By Donation.

BUTLER, BENJ. F., M. C. Report of Agriculture, Jan., 1871. Hoar's Speech in U. S. H. R., Feb. 7, 1871.

GAFFIELD, JOHN V. Report of the Librarian of Congress for 1870.

HOTCHKISS, FRANK E., of New Haven, Conn. New Haven Directories for 1840, 41-2, '2-3, '3-4, '4-5, '6-7, '7-8, '9-50, '65-68. Cleveland Directory, 1837-38. Commercial Directory, 1823. Connecticut Register 1847, '8, '52, '3, '4, '5, '8, '9, '61, '62. Beckwith's Almanac, 1852, '9, '61, '2, '3, '8, '70, '1. Prindles' Almanac, 1826, '40, '7, '8, '51, '5, '60. Middlebrook's Almanacs, 1810, '11, '13, '23, '6, '7, '34. Beers's Almanac 1805, '12, '19, '22, '23. Boston Municipal Register for 1867. Miscellaneous pamphlets, 65.

KIMBALL, JAMES. Illustrated Circular, "The National Bridge and Iron Works," 8vo. Boston, 1869.

LEE, FRANCIS H. Catalogue of the Free Public Library in Worcester. Miscellaneous pamphlets, 3.

LEE, JOHN C. Commercial Bulletin, Feb.

PRESTON, CHARLES P. Miscellaneous pamphlets, 8.

STONE, EDWIN M., of Providence, R. I. Report of the Ministry at large. Jan. 8, 1871.

CHARLES SUMNER, U. S. S. Schurz's Speech in United States Senate, Dec. 15th, 1870, on "Political Disabilities." Report of Agriculture for Jan., 1871.

UNKNOWN. History of Illinois and Life of Ninian Edwards. 1 vol. 8vo. Transactions of the Wisconsin State Agricultural Society for 1869. 1 vol. 8vo. Report of the Board of Education of Chicago for 1869, 1870. 2 vols. 8vo. Report of the Board of Trustees of the Illinois Industrial University for 1868, 1869. 2 vols. 8vo. Miscellaneous pamphlets, 13.

WATERS, J. LINTON, of Chicago, Ill. Report of the Board of Health of Chicago for 1867, '8, '9, and a Sanitary History of Chicago, from 1833 to 1870, 1 vol, 8vo.

By Exchange.

AMERICAN PHILOSOPHICAL SOCIETY, Phila. Proceedings, Vol. xi, No. 85, 1870.

NEW YORK MERCANTILE LIBRARY ASSOCIATION. Officers and Members for 1870-71. 8vo pamph.

NATIONAL ASSOCIATION OF WOOL MANUFACTURERS. Bulletin. Vol. II, No. 4. 8vo pamph.

PUBLISHERS. American Booksellers. American Naturalist. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. National Farmer. Nature. Peabody Press. Salem Observer. Sotheran's Catalogue.

Charles E. Fabens and Benjamin H. Fabens were elected resident members. Adjourned.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3.

SALEM, MASS., MARCH, 1871.

No. 3.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, MARCH 6, 1871.

THE President in the chair. Records of preceding meeting read.

The President read a communication on

THE ANCESTRY AND BIRTHPLACE OF HAWTHORNE,

whose writings have imparted a degree of interest to many places in this city, and whose successful career in the field of letters, has added a brilliant star to the glorious galaxy of Salem worthies. Here much interest centres; foreign tourists and others come to visit the scenes which he has so well described in his writings, and to repeople them with those characters which he has so vividly portrayed. This interest is on the increase, each year adding to the number of those who thus show their respect and admiration of the man and his writings.

It is proposed only to allude briefly to his ancestry in America; very little is known of the family in the motherland. Hawthorne, when in England, devoted much time, fruitlessly, to search out the residence of any of them, and wrote to a friend, "of all things, I should like to find a grave-stone in one of these old church-yards

with my own name upon it ; although for myself I should wish to be buried in America."

The name has been prominent in our annals from the first settlement, and has been variously spelt, eight different modes having been noticed.

The emigrant ancestor, Major William Hathorne, came over in the *Arabella*, with Winthrop, as stated by Savage in his *Genealogical Dictionary*. He went probably, first to Dorchester, having had grants of land there in 1634 ; made freeman May 14, 1634, and was one of the ten men in 1635. In 1636 Salem tendered him grants of land if he would remove hither ; he came in that or the year following. From that time his name appears on our records, as holding important positions, Commissioner, Speaker of the House of Representatives, Counsel in cases before the Courts, Judge on the Bench, soldier commanding important and difficult expeditions, and in innumerable other cases.

Johnson, in his "wonder working Providence," thus says of him, "yet through the Lord's mercy we still retain among our Democracy the Godly Captaine William Hathorn, whom the Lord hath indued with a quick apprehension, strong memory, and Rhetorick, volubility of speech, which hath caused the people to make use of him often in Publick Service, especially when they have had to do with any foreign government." He died in 1681. His son John seems to have inherited many of his prominent traits of character, and to have succeeded in all his public honors, was freeman in 1677, Representative in 1683, Assistant, or Counsellor, 1684 to 1712, except the years of Andros' government ; a Magistrate in the prosecution of the witchcraft trials, afterwards of the Superior Court ; Colonel of a regiment and commander of the forces in the expedition of 1696, on the retire-

ment of Church. He died in 1717. The name appears, thus far, to have been as prominent in the civil history of that period, as it has been in the elegant literature of the present.

Joseph Hathorne, the next in descent, married, June 30, 1715, Sarah, daughter of William Bowditch, and a sister of Ebenezer, the grandfather of Hon. Nathaniel Bowditch, the eminent mathematician. He was occupied principally with the quiet and retiring duties of the farm, and did not take that leading part in publick affairs which his father and grandfather had been called upon to assume.

He died in 1762, having had among other children, Daniel, who, during the period of the Revolution, was in command of several Privateers, and noted for his courage and bravery; died April 18, 1796, at the age of 65. His contemporaries speak of him in high terms of commendation, and his funeral was attended with that respect which real worth ensures. No descendants are now living in Salem who bear his name. The eldest son died young; the second, Daniel, died at sea, unmarried, in 1805, a master-mariner; the third, Nathaniel, was the father of the subject of this notice. The eldest daughter, Rachel, married Simon Forrester, one of the Pioneers in the East India trade, who died in 1817, leaving a large fortune, the results of his successful commercial enterprises.

Nathaniel Hathorne, son of the preceding, born in 1776, married Elizabeth Clarke Manning, daughter of Richard Manning, and sister of Robert, the distinguished pomologist of Salem. Mr. Hathorne, after his marriage, continued to reside in the family mansion, now numbered 21 Union street, and in the northwest chamber of this house, Nathaniel, the author, was born, July 4, 1804. This house was built about two hundred years since by Benjamin Pickman, some additions and alterations having

been made by the several owners; the land, on which it stands, was, originally, part of the grant to Joseph Hardy, who conveyed it Aug. 7, 1685, to his son-in-law, Benjamin Pickman; B. Pickman's wife, Elizabeth, was daughter of Joseph Hardy; Joshua Pickman, a son of Benjamin, conveyed the same to Jonathan Phelps, June 22, 1745, he with his wife, Judith, transferred it to their son-in-law, Daniel Hathorne, Sept. 28, 1772. Rachel, the wife of the grantee, being the daughter of the grantors. This estate remained in the family until 1850, when it was sold by the heirs to Isaac Cushing.

Soon after the death of Capt. Nathaniel Hathorne, which took place at Surinam, in the spring of 1808, the mother went with her children to the family of her father, Richard Manning, at the Manning house, No. 10 Herbert street — this estate extended through to Union street, adjoining that of his birthplace. There they lived till October, 1818, when they went to Raymond, Me., where his grandfather, in connection with his uncle Richard, and others of the family, had made very extensive investments in lands. Hawthorne lived here about a year in a large house built near the shore of Sebago Lake, by his uncle, Robert Manning, in the expectation that the Manning family would remove from Salem to Raymond. Hawthorne returned to Salem to attend school, in the autumn of 1819, living again in the family of his grandmother Manning, and during the vacations, whilst a student at Bowdoin College, also after his graduation. In December, 1828, he and his mother removed to North Salem, to a house built and owned by Robert Manning, adjoining his own residence on Dearborn street. In December, 1832, they moved again to the ancestral mansion in Herbert street. About 1836 he went to Boston to edit a magazine, and after a short residence, returned

again to the same old house, but not long after he went again to Boston, where he stayed until he took up his residence at Brook Farm. He was married in Boston, July, 1842, to Sophia A., daughter of Dr. Nathaniel Peabody of Salem, and lived for some time at the "Old Manse," in Concord, Mass. In October, 1845, he came to Herbert street with his family, as boarders, remaining there six months, when he removed to Boston. In August, 1846, he came back to Salem, and lived at No. 18 Chestnut street. In October, 1847, he removed to 14 Mall street, in this place he lived until April, 1850, and then left Salem for the last time, as a resident.

We have thus given some account of the paternal ancestry of Hawthorne in this country, his birthplace and other residences in Salem, where he passed many years of his life, and where many of his choicest productions were written—leaving to others the delineation of his character and of his writings.

This communication, of which the above is only a brief abstract, was referred to the Publication Committee for insertion in the Historical Collections.

Mr. F. W. PUTNAM exhibited several specimens of the peculiar fishes belonging to the genera of Tetraodon and Diodon which had been recently presented to the Museum. He called attention to the singular structure of the teeth, which, while appearing simply as one large tooth on each jaw in Diodon, and as two on each jaw in Tetraodon, really consisted of a large number of teeth so closely cemented together by the deposit of dentine as to form the solid compound teeth characteristic of the family. He also pointed out the peculiar structure of the scales, modified so as to serve as spiny organs of defence, which in connection with the power these fishes have of inhaling

air to such an extent as to enable them to float on the surface of the water like an inflated balloon, rendered it almost impossible for any other fish to swallow them. The flesh of many species of this family are well known to be poisonous, and an old sailor will seldom risk eating them.

The following correspondence was announced,—

New England Society of Orange, Feb. 26; Smithsonian Institution, Feb. 15; E. W. Buswell, Boston, Feb. 28; G. F. Choate, Salem, Mch. 6; J. Colburn, Boston, Feb. 20; Wm. Graves, Newburyport, Mch. 2; M. How, Haverhill, Feb. 25; Mrs. E. D. Kimball, Salem, Feb. 22; D. Webster King, Boston, Feb. 20; W. S. Perry, Geneva, N. Y., Feb. 23; William Prescott, Concord, N. H., Feb. 25; A. H. Quint, New Bedford, Feb. 23, 27; J. K. Wiggin, Boston, Feb. 21.

The following additions to the Library were reported.

Donations.

ABBOTT, A., of Newburyport. Moore's Almanack for 1778. An Act for Regulating and Governing the Militia of Massachusetts in 1793. The New England Courant printed in 1723.

BLAKE, C. J., of Boston. Late contributions to Aural Surgery by donor. Read May 24, 1870.

BUTLER, B. F., M. C. Speech in H. R. Feb. 14, 1871, on Expulsion of West Point Cadets.

GARRISON, W. P., of New York. Constitution and By-Laws of the New England Society of Orange, as adopted May 12th, 1870.

LEE, JOHN C. Commercial Bulletin for Feb.

LINCOLN, SOLOMON. Memoir of Mrs. Rowson by Elias Nason. 1 vol., small 4to, Albany, 1870.

SUMNER, CHARLES, U. S. S. Drake's Speech in U. S. Senate, Dec. 16, 1870. Congressional Directory, 3rd Sess., 41st Cong. Schurz' Speech in U. S. Senate, Jan. 27, 1871. Hoar's Speech in U. S. H. R., Feb. 7, 1871. Eulogies delivered in U. S. Cong., Feb. 9, 10, 1871, on Death of Hon. John Covode. Report of the U. S. Commissioners to the Paris Exposition. 6 vols. 8vo. Washington, 1870. Reports of the Total Eclipse of August 7, 1869, 1 vol., large 4to. Message and Documents, 2d Sess., 41st Cong. 1869-70. 1 vol. 8vo.

HINGHAM PUBLIC LIBRARY. Address delivered at the Dedication, July 5th, 1869, by Hon. Thomas Russell.

WATERS, J. LINTON, of Chicago, Ill. Free Labor the first condition of Free Trade. By C. W. Felt.

By Exchange.

BUFFALO HISTORICAL SOCIETY. Proceedings for 1869-70.

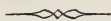
IOWA STATE HISTORICAL SOCIETY. Annals of Iowa for Jan., 1871.

MARYLAND HISTORICAL SOCIETY. Account of the Settlement of Ellicott's Mills, read before the Society, Nov. 3., 1870.

PUBLISHERS. American Naturalist. Christian World. Eclectic. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. National Farmer. Nature. Peabody

Press. Quaritch's Catalogue. Salem Observer. Silliman's Journal. The New Carpet.

Wm. A. Ireland and Wm. H. Kilvert were duly elected Resident members.



REGULAR MEETING, MONDAY, MARCH 20, 1871.

THE President in the chair. Records of preceding meeting read.

The President presented a copy in manuscript of the Genealogy of the Cabot family, prepared by Hon. Joseph S. Cabot of this city, and which he had recently received from him, a donation to the manuscript department, and made some remarks upon the history of this family in this county. Two brothers came to Salem about 1700, John and George, from the Island of Jersey—John married Anna Orne and was the ancestor of the family in this vicinity and this record refers especially to an account of his descendants. George married Miss Marston, daughter of Benjamin Marston of Salem, died in 1715, leaving a son Marston, who graduated at Harvard college in 1724, and was settled in the ministry at Killingly, Conn. He married Mary, daughter of Rev. Josiah Dwight and died April 8, 1756, leaving many descendants.

Mr. ALLEN W. DODGE made some interesting remarks on some of the habits and customs of our ancestors as gleaned from an examination of the wills and inventories of estates on file in the Probate office. This subject will probably be alluded to again at some future meeting.

The Secretary announced the following correspondence :

Boston Athenæum, Mch. 10; Boston Public Library, Mch. 13; Corporation of Harvard College, Mch. 13; Mass. State Board of Health, Mch. 18; Mass. State

Library, Mch. 14; New York State Library, Mch. 14; Peabody Institute, Peabody, Mch. 13; R. I. Historical Society, Mch. 15; George W. Duncan, Haverhill, Mch. 4. 7; Mrs. A. T. Endicott, Boston, Feb. 28, Mch. 15; B. H. Hall, Troy, Mch. 18; Mrs. P. A. Hanaford, New Haven, Mch. 17; F. G. Hastings, New York, Mch. 18; Z. A. Mudge, Marblehead, Mch. 18; Josiah Newhall, Lynnfield, Mch. 1, 8; G. H. Preble, Charlestown, Mch. 16; John C. Ropes, Boston, Mch. 17; Henry White, New Haven, Conn., Mch. 18.

The Librarian reported the following additions :

By Donation.

BUTLER, B. F., M. C. Patent Office Reports. Vols. 2, 3, 4, 1868. 3 vols. 8vo. Report of the Department of Agriculture for 1869. 1 vol. 8vo. Acts and Resolutions of U. S. at the 2d Sess., 41st Cong. 1 vol. 8vo. Message and Documents for 1869-70. 1 vol. 8vo. Eighth Census of the U. S. for 1860. 4 vols. 4to. Congressional Globe, 2d Sess. 41st Congress, with Appendix. 7 vols. 4to. 1869-70.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 71.

PHIPPEN, GEO. D. A Treatise of Prayer. 1 vol. 12mo. London.

RANDALL, STEPHEN, of Providence, R. I. Publications of the Narragansett Club. Vol. IV. 1 vol. small 4to. Providence, 1870.

SUMNER, CHARLES, U. S. S. Land Office Report for 1868. 1 vol. 8vo. Finance Report for 1870. 1 vol. 8vo. Mining Statistics West of the Rocky Mountains by R. W. Raymond, 1 vol. 8vo. Report on the Commerce and Navigation of U. S. Fiscal Year ended June 30, 1870. 1 vol. 8vo.

WORTHEN, Prof. A. H., of Springfield, Ill. Geological Survey of Illinois. Vol. IV. 1 vol., small 4to. 1870.

By Exchange.

MINNESOTA HISTORICAL SOCIETY, Report of, to the Legislature of Minnesota for 1870. 8vo. pamph.

VERMONT HISTORICAL SOCIETY. Proceedings. Oct. and Nov., 1870. 8vo. pamph.

PUBLISHERS. American Literary Gazette. Essex Banner. Gardner's Monthly. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. National Farmer. Nature. Peabody Press. Quaritch's Catalogue. Sotheran's Catalogue.

Henry W. Moulton of Newburyport, and Dirk Teupken of Salem were elected Resident members.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3.

SALEM, MASS., APRIL, 1871.

No. 4.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, APRIL 3, 1871.

THE President in the chair. Records of preceding meeting read.

THE SALEM FEMALE ANTI-SLAVERY SOCIETY.

The PRESIDENT mentioned that the Records, Correspondence and other papers of this society had recently been deposited with the Institute, and read the following communication from Rev. John L. Russell, accompanying the same.

To the Historical Department of the Essex Institute:

The Abolition of Slavery in the United States of America has become an illustrious fact in the History of this Country. By very small beginnings, and by little springs and rills, the mighty stream of events which rolled onward to the ocean of universal freedom has been nourished and fed. Of one of these, the Records of the "Salem Female Anti-slavery Society," may be mentioned with honor. By a vote of the Society, at the closing meeting of its existence, the records have been entrusted to the historical department of the Essex Institute. To

these the correspondence and business details have been added. To the future historian of the ancient town of Salem, they will present subjects of intense interest and earnest thought. *In minimis maximus* is no less true of man's advancement than of God's operations. In addressing to the historical department these few words by being honored with the duty of presenting the gift, I subscribe myself,

Respectfully,

JOHN L. RUSSELL.

The President remarked that early in the spring of 1834, a few ladies having carefully examined the subject of slavery for the purpose of ascertaining what duties may devolve upon the female portion of the community in relation thereto, called a meeting on the 4th of June following, and formed an organization under the name of the Salem Female Anti-slavery Society. Mrs. Cyrus P. Grosvenor was elected the first President. She was succeeded in 1835 by Maria A. Driver, in 1838 by Lydia Dean, in 1843 by Lucy G. Ives, who continued the presiding officer until Jan. 3d, 1866, when its dissolution was deemed advisable; the legal abolition of slavery having been accomplished, it was thought that more good could be effected by working with the Freedman's Aid Society, or some similar organization.

During the thirty-two years of the existence of this society, the members were very assiduous in the promotion of its objects; no exertions were spared, despite of obloquy, and at times great unpopularity, to advance the cause for which they were striving, and which for several years appeared to be almost hopeless.

Frequent meetings were held to receive and impart intelligence on the subject of emancipation; also to devise means to aid kindred associations, and the efforts of zeal-

ous co-laborers; and by means of the press, of lectures and occasional addresses, to diffuse information and awaken a more general interest and coöperation. From 1844 to 1860 inclusive, annual courses of lectures, consisting of some six or eight each, were delivered. Scholars, who rank high in the field of letters, and the leading spirits in this movement were enlisted and took part in these various exercises.

In this connection may be mentioned the names of Wm. L. Garrison, George Thompson, George W. Curtis, T. W. Higginson, Wendell Phillips, Theodore Parker, Edmund Quincy, John Pierpont, Caleb Stetson, Samuel J. May, T. T. Stone, James F. Clarke, Samuel Johnson, O. B. Frothingham, E. B. Willson, Wm. H. Channing and others.

The course of events, however, during the past decade of years, has led to the realization of so many of their long cherished plans and aspirations that the continuance of the organization is no longer necessary. The record of their doings, now closed, has become historic. An impartial future will, doubtless, give due credit to the part which they have performed in this great movement; and do ample justice to the zeal, industry and self-sacrificing spirit that have characterized all their actions.

The Institute, grateful for this mark of confidence, will carefully preserve this valuable donation to the department of manuscripts.

PAPER MONEY.

Mr. JOHN ROBINSON, having arranged the collection of paper money in the possession of the Institute, was requested to give some account of the same. He stated that until its arrangement the past year, it was seldom seen. This arrangement is now completed and in such

manner that at any time more can be added without deranging in any way the systematic order.

We have two volumes, the first containing the earlier colonial issues, those of the Continental Congress and the State Banks prior to 1864. The second volume contains the various issues during the recent war and foreign bills of all sorts. In Vol. I. the New Hampshire and Massachusetts bills are particularly fine, some being very rare and valuable, especially one of Massachusetts of 1690. Of the Middle States we have some rare and many fine ones; two, from the press of Benjamin Franklin, are now much esteemed. North Carolina, of the Southern States, is the best represented, having a very fine series. Those of the Continental Congress are nearly perfect, from one-third of a dollar to eighty dollars; these were issued at many different dates, some of the bills of which are extremely rare.

In examining the few works we possess relating to this old currency, I find several quite interesting facts which are worthy of notice. In the distribution of the amount of the loan, which, according to wealth and population, was divided among the States the following order was adopted.

Virginia,	\$496,000	Maryland,	\$310,000
Massachusetts,	434,000	Conn., N. C.,	} 278,000
Pennsylvania,	372,000	S. C., and New York, }	

New York, now so high in the scale, was then only a fifth rate State, while Massachusetts was second.

Another fact—in 1778 and 1779, an army of 40,000 men was kept and national expenses met, by the issue of, in '78, \$63,000,000 and in '79, \$72,000,000, with only \$153,000 in coin in the treasury for the entire two years. Thus we see how our revolution was sustained by an active printing press.

The depreciation of these bills was so gradual that in-

stead of the great loss which some believe our ancestors met, it is evident from the best authority that this was the easiest system of taxation that could be imposed for so great an undertaking and result.

The second volume contains a valuable and an extensive collection of the war issues, nearly all in fine order; also a quite large series of foreign bills, those of China being the most perfect and curious.

It is hoped that, since this collection is so well arranged, it will receive attention and considerable additions; this is always the reward of placing specimens in a form where they can readily be seen, and thus far it has been very apparent to this society. Many of these bills would here make a valuable addition, while separately, in private possession, they are of little consequence.

EGGS OF THE DADDYLONGLEGS.

Mr. JAMES H. EMERTON exhibited some drawings which he had made, illustrating the development and growth of some species of insects and gave the progress of his investigations on this subject. He remarked, that three times in the neighborhood of Albany, N. Y., he had found eggs of a Phalangium (Daddylonglegs), probably *P. formosum* Wood. April 3, 1870, he found four eggs on the under side of a damp, rotten stump. The eggs were near together, but not attached to each other or to the rotten wood. The eggs were nearly mature, and April 17 the young came out. April 10, 1870, five eggs were found under rotten wood about three miles from the first place. These eggs were also near together, but not attached or enclosed. The young were nearly ready to hatch, and closely resembled adults except in size and color. March 5, 1871, he found about twelve eggs under the damp bark of a rotten stump not far from the place where eggs were found April 10, the year before. In

loosening the bark, all but three of the eggs were unfortunately lost. These eggs were nearly mature. March 18, the young moved in the egg when disturbed. The eggs were very transparent, especially when wet with water. The legs of the first and second pairs were folded sideways around the body, the third and fourth pairs were turned under the body and forward near the middle line, their extremities coming up each side of the head. The basal joints of the mandibles seemed shorter in proportion than in the adult. While examining two of these in water in a cell they were cracked by too much pressure of the cover. The next day the young spiders were out walking about the bottle. They were .04 of an inch in length. The number of joints of the tarsi was much less than in the adult *P. formosum*, being seven or eight in the first pair of feet, seventeen or sixteen in the second, eight in the third and ten in the fourth.

Charles H. Webber of Salem was elected a Resident member.

The Secretary announced the following correspondence : —

Buswell, E. W., Boston, Mch. 20, 24; Crowninshield, F. B., Boston, Mch. 20; Hall, B. H., Troy, N. Y., Mch. 22; Verrill, A. E., New Haven, Conn., Mch. 21; Hawerman, A. D., Chattanooga, Tenn., Mch. 20; Higginson, T. W., Newport, R. I., Mch. 21; Holmes, J. C., Detroit, Mich., Mch. 30; Lunt, W. P., Boston, Mch. 24; Moulton, Henry W., Newburyport, April 3; Perkins, A. T., Boston, Mch. 24; Preble, Geo. Henry, Charlestown, Mch. 27, 31; Waite, Otis F. R., Concord, N. H., Apr. 1; Westermann, B., New York, Mch. 21; Bowdoin College, Mch. 20; Buffalo Historical Society, Mch. 21; Maine Historical Society, Mch.; Moravian Historical Society, Mch. 20; New Hampshire Historical Society, Mch. 20; New Jersey Historical Society, Mch. 22; New York Historical Society, Mch. 20; Providence Athenæum, Mch. 24; Rhode Island Historical Society, Mch. 21.

The Librarian reported the following additions :

By Donation.

AMERICAN COLONIZATION SOCIETY. Annual Report for 1870.

BOSTON GYNÆCOLOGICAL SOCIETY. Annual Address for 1871, by Winslow Lewis.

BROOKS, MRS. H. M. The Woman's Journal for 1870.

BUTLER, HON. B. F., M. C. Report on Agriculture for Feb., 1871. Ames's Speech in the U. S. S., March 21, 1871.

CROSBY, NATHAN, of Lowell. Speech on Inebriate Asylums.

CROWNINSHIELD, FRANCIS B., of Boston. Reports on the Finances from 1790 to 1814, 1 vol. 8vo. Executive Journal 1815 to 1829. 1 vol. 8vo. Journals of Congress, 1778 to 1788. 2 vols. 8vo.

CUTTER, ABRAM E., of Charlestown, Mass. The Works of Anne Bradstreet. 1 vol. 4to. History of The Cutter Family of New England. 1 vol. 8vo. Miscellaneous pamphlets, 16.

FOWLER, CHARLES B. The Pilgrim's Prayer. 1 vol. 16mo. An Inquiry in the Worship of the Primitive Church. 1 vol. 12mo. Juvenile Letters by C. Bingham. 1 vol. 16mo.

HANAFORD, REV. MRS. P. A., of New Haven, Conn. From Shore to Shore and other Poems, by donor. 1 vol. 12mo. The Life and Writings of Charles Dickens, by donor. 1 vol. 12mo. Belshazzar's Feast, a Sermon by donor.

LEE, JOHN C. Commercial Bulletin for March, 1871.

PEABODY ACADEMY OF SCIENCE. Annual Reports of the Trustees for 1869-70.

STEPHENS, W. H., of Lowville, N. Y. The Oxford Academy Jubilee, held at Oxford in 1854. 1 vol. 8vo.

SUMNER, HON. CHARLES, of U. S. S. Report on Agriculture for Feb., 1871.

TATE, GEO., of London. Proceedings of the Berwickshire Naturalist's Club. Vol. vi. No. II. 1870.

WALTON, EBEN N. Semi-centennial Celebration of the North Baptist Church in Randolph, Mass., Nov. 7, 1869. 1 vol. 8vo.

WENHAM, Town Clerk of. Reports of the Town of Wenham for 1870.

By Exchange.

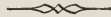
NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. New England Historical and Genealogical Register. April, 1871.

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PHILADELPHIA ACADEMY OF NATURAL SCIENCES, Proceedings of. Sept., Oct., Nov., and Dec., 1870.

WISCONSIN STATE HISTORICAL SOCIETY. Address before the. By Hon. C. I. Walker, Jan. 31, 1871. 8vo pamph.

PUBLISHERS. American Literary Gazette. American Naturalist. Book Buyer. Christian World. Essex Banner. Fireside Favorite. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. The Book Seller's Guide. Quaritch's Catalogue.



REGULAR MEETING, MONDAY, APRIL 17, 1871.

THE President in the chair. Records of preceding meeting read.

A letter was read by the President from H. M. Goatkin, fellow of St. John's College, Cambridge, England,

requesting an exchange of lingual ribbons of the Marine Mollusca; also in Protozoa or Diatomacea. The letter was referred to Rev. E. C. Bolles.

THE NEW AUSTRALIAN FISH.

MR. F. W. PUTNAM gave an account of the interesting and very important discovery of a fish, by Hon. Wm. Forster, in the fresh waters of Australia, that seemed to combine characters of the Ganoids with those of Chimeroids, which were an order of the subclass to which the sharks belonged. This fish has been referred by Mr. Krefft, on account of the resemblance of the teeth, to the genus *Ceratodus*, known only from teeth found in the Devonian period, and Dr. Günther, who has lately made an examination of specimens, confirms Mr. Krefft's opinion, and is also led from its peculiar structure to unite the subclasses of Ganoids, Dipnoi and Selachians together as one subclass, which he calls Palæichthyes.

Mr. Putnam thought that, while we only knew the fossil *Ceratodus* from its teeth, it was venturing too far to refer the Australian fish to the same genus, especially as the fossil teeth have characters that have heretofore associated the genus more intimately with sharks than with Ganoids; and as we are apt to be misled by any single character, teeth being by no means an exception.

In relation to the new classification proposed by Dr. Günther, Mr. Putnam, while agreeing with him in uniting the Ganoids with the Dipnoi, as both Mr. Gill and himself* had previously done, and while admitting that the Chimeroids have affinities with them, was yet doubtful about placing the Selachians in the same subclass without uniting the Marsipobranchiates with them, for

* In a review of the classification of the Vertebrates, in "Huxley's Classification of Animals."—American Naturalist, Vol. 3, p. 610.

he thought that this last group was as closely allied to some forms of the Ganoids as were the Chimeroids to other forms; and in fact the bony fishes were also so closely united with the Ganoids as to make any of the proposed subclasses very difficult if not impossible to define. So long as living fishes alone were considered, the several subclasses seemed to be well defined, but now that fossil fishes are receiving more attention, we find that many of the proposed groups must be modified.

John S. Carter of Salem was elected a Resident member.

The Secretary announced the following correspondence:—

From Basel, Naturforschende Gesellschaft, Dec. 10; Bremen Naturwissenschaft Verein, Dec. 7; Buffalo Society of Natural Sciences, April 7; Edinburgh Royal Society, Oct. 7; Leipzig, Die Königlich Sächsische Gesellschaft der Wissenschaften, Dec.; Meklenburgh, Verein der Freunde der Naturgesichte, Dec. 17; Minnesota Historical Society, April 11; Ohio Historical and Philosophical Society, April 1; Stettin Entomol., Verein, Sept.; Western Reserve Historical Society, April 11; Yale College, April 5; Bartlett, W. S., Boston, April 4; Hotchkiss, Frank E., New Haven, Mch. 29; Piper, W. H. & Co., Boston, Apr. 3; Preble, G. H., Charlestown, April 6, 17; Westermann & Co., New York, April 14.

The Librarian reported the following additions:

By Donation.

ALMON, A. B. Miscellaneous pamphlets, 250.

BUTLER, B. F., M. C. Howe's Speech in U. S. H. R., March 27, 28, 1871. Sumner's Speech in U. S. Sen., March 27, 1871.

COOK, GEO. H., of New Brunswick, N. J. Report of the State Geologist of New Jersey for 1870.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 25.

HIGGINSON, T. W., of Newport, R. I. Army Life in a Black Regiment. 1 vol. 12mo.

POOLE, WM. F., of Cincinnati, O. Report of Cincinnati Public Library, 1870-71.

SUMNER, HON. C., U. S. S. Sumner's Speech in U. S. S., March 27, 1871. Outrages in the Southern States. 1 vol. 8vo.

WILLIAMS, J. O., of Boston. Mammoth Trees in California. 8vo pamph.

WINTHROP, R. C., of Boston. Proceedings of the Trustees of the Peabody Education Fund, Feb. 15, 1871. Oration on the Two Hundred and Fiftieth Anniversary of the Landing of the Pilgrim Fathers. 8vo pamph.

By Exchange.

BOSTON NUMISMATIC SOCIETY. Amer. Journal of Numismatics for April, 1871.

ESSEX INST. BULLETIN. III 6

CONNECTICUT ACADEMY OF ARTS AND SCIENCES. Transactions. Vol. I, Part II. 1 vol. 8vo.

MASSACHUSETTS HISTORICAL SOCIETY. A Dialogue written by Gov. Wm. Bradford of New Plymouth. 1 vol. 8vo. Boston, 1870.

MORAVIAN HISTORICAL SOCIETY OF NAZARETH, PA. The Moravian Episcopate by Edmund De Schweinitz. 8vo pamph.

NOVA SCOTIA INSTITUTE OF NATURAL SCIENCE, Halifax. Proceedings and Transactions of. 1869-70. Vol. II, Part IV.

PUBLISHERS. American Literary Gazette. American Naturalist. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.



SEMI-CENTENNIAL ANNIVERSARY, FRIDAY, Apr. 21, 1871.

THE Semi-centennial Anniversary of the Essex Historical Society, or what is known as the Historical Department of the Institute, occurred this day, and was observed by appropriate exercises in the afternoon and evening, at the rooms in Plummer Hall. The exercises were opened by prayer by the Rev. E. S. ATWOOD.

The President, HENRY WHEATLAND, made the following introductory remarks :

At the close of this half century in the history of our society, it was deemed meet to mark the date by some suitable observance ; accordingly at a meeting in December, votes were passed confirmatory of the expression of this opinion, and the appointment of a committee to make the necessary arrangements.

An historical sketch of the Institute has been printed and widely distributed, and notices have appeared in several publications of a complimentary character. It would therefore seem unnecessary to give a detailed account of our history, but merely to allude briefly to the most salient points in the record.

Some fifty years since Salem had residing within her limits many eminent scholars, scientific and literary —

also those who took leading positions in commercial and other enterprises that tend to the prosperity of a community. At this time the Salem Athenæum had collected many valuable works, and the East India Marine Society a museum of natural history and ethnology—the latter especially rich in those specimens that illustrate the habits and customs of the people of India and the Pacific Isles. These institutions had acquired a merited celebrity, and were attracting the attention of scholars, tourists, and the general public. The ample material for the organization of an active society of history was waiting for some exciting cause to put in motion the crystallizing process.

Soon after the death of the Rev. Dr. Bentley, which occurred in December, 1819, much regret was expressed that the valuable and large mass of historic material, books, etc., which he had collected during a successful ministry of nearly forty years, should be removed from Salem. There being then no place of deposit, of course the tendency was to go elsewhere. To prevent a similar occurrence in the future, at the suggestion of Hon. J. G. King and George A. Ward, a meeting was convened on the afternoon of Saturday, April 21, 1821, just fifty years since, Judge Story presiding. This meeting organized under the name of the Essex Historical Society, and appointed a committee to prepare rules and orders, also a petition to be presented to the Legislature for an act of incorporation. The act was obtained in the June following, and on the 27th of that month the first corporate meeting was held, and an organization was effected with the venerable Dr. E. A. Holyoke as President, who continued its presiding officer until his decease in April, 1829, at the advanced age of 100 years and 7 months. In 1847 the union with the Natural History Society was

discussed, and in February following, the act was passed constituting the members of the two societies members of the Essex Institute. It was then organized into three departments, that of History, Natural History, and Horticulture—Horticulture having been a leading object of the Natural History Society, and to the horticultural exhibitions held under its auspices that society was largely indebted for its success.

The bequest of Miss Caroline Plummer in 1854, of a sufficient sum to erect this building, to the proprietors of the Salem Athenæum, and the removal of the library and collections of the Institute to the same, in 1857, formed a memorable epoch in its history. The endowment of a fund of \$140,000, by George Peabody, the great philanthropist, for the promotion of science and useful knowledge in this his native county, which was placed in the hands of nine trustees who were incorporated as "Trustees of the Peabody Academy of Science," the purchase of the East India Marine Hall, the refitting of the same for the deposit of the valuable museum of the East India Marine Society, and the extensive scientific collections of the Institute, deserve a passing notice. Though the Institute was thus relieved of the care of its scientific collections, yet the growth of the library and the increase of specimens illustrating the other departments of which the Institute takes cognizance, require constant vigilance to provide the requisite means to have the same properly arranged for consultation and use by the members and students in quest of information in their special line of inquiry.

The last subject to which I shall allude is the amendment of the charter in 1870, which provides that the Institute shall have for its objects the promotion of the Arts, Literature, and Science, in addition to those for which the Essex Historical and the Essex County Natural His-

tory Societies were incorporated. A fourth department was thus added, that of Fine Arts — so that the organization consists of four departments, that of History, Natural History, Horticulture, and the Fine Arts. Initiatory steps have been taken to the formation of an art museum, which, if properly cared for, would do much to the promotion of culture and refinement among the people.

An excellent select choir, under the direction of Gen. H. K. OLIVER, then sang the following Original Hymn, written for the occasion by Rev. JONES VERY :

Amid the swift, onrushing years,
We hear a voice, that bids us stay ;
Back to the storied Past we turn,
And reverently its call obey.

For not dissevered, weak, alone,
Do we amid the Present live ;
But to our lives the by-gone days
Their knowledge and their virtues give.

Made wise by wisdom of the Past,
We for the Future shall prepare ;
Sharing our Fathers' noble aims,
We shall their fame and glory share.

But soon forgotten, or destroyed,
The records of that early age ;
Had not their sons, with loving care,
Memorials left for History's page.

Honor we give to those, who here
Recorded for our use their lore :
Whose names and virtues we revere,
Though seen with us their forms no more !

Inspired by their example high,
May we their chosen path pursue ;
Alike to present, and to Past,
In all our thoughts and acts be true.

ABNER C. GOODELL, Jr., the Vice President of the Historical Department, then delivered an address of which the following is an abstract :

In commencing, he said that the commemoration of the fiftieth anniversary of the foundation of the Essex Historical Society, naturally suggested as a theme befitting the occasion, a consideration of the interdependence of history and the other sciences. The steps in the formation of the society had been so often traced that a fresh treatment of so familiar a topic, would not be expected.

Returning to pursue the theme first proposed, he instituted a brief comparison of some salient features of every day life, now and fifty years ago, in order to appositely illustrate his argument. No doubt the American citizen of 1821 felicitated himself that he was born in an age so auspicious. It was a generation after the American Independence had become an accomplished fact. The telescope was then an old invention, and among the actual achievements of that age was the mariner's compass, the art of printing, the use of logarithms and the true principles of chemistry, the discovery of the circulation of the blood, and other important facts—all inventions which seemed to complete the busy progress of civilization. Yet, viewed from the stand-point of the present day, there was a vast difference in physical comfort and luxury. The speaker pictured the comforts and conveniences of the present day, and said for all this improvement they were indebted to the progress of science. The discovery of the planet Neptune was an illustration of the perfection, the almost prophetic power of the science of Astronomy. The improved microscope and spectroscope were also among the mechanical triumphs of modern science. He alluded to the advantages derived from the perfection of the science of chemistry. Within fifty

years geology and palæontology had overcome great obstacles. History ceased to be history when it failed to recognize the power of science. The interdependence of the sciences was everywhere apparent. The closest relations exist between geology, palæontology and archæology on the one hand, and history on the other. The science of human physiology had also a direct bearing upon history. The history of science should not be confounded with history written upon a scientific basis. The conclusion of the scientific man should be inductions. The use of statistics affords an instance of a purely scientific plan applied to history. Carried still farther this science might be useful in solving the problems of political economy. Every part of science which is not learned from original discovery, was learned from history. The best scientific treatises were purely historical. The whole tendency of modern science went to prove that there was a still higher province for this blended history and science, and that was the development of a system of ethics, with all the certainty and regularity of mathematics. The speaker then referred particularly to the society, its history and its work. What existed in the day of its founders only in name, now afforded for public use a large and commodious building, a library of 26,000 bound volumes, more than 100,000 pamphlets, and 2,500 volumes of newspapers, bound and unbound, including duplicates. On the other side of the library table the Athæneum displays nearly 14,000 volumes more, in every department of literature. The publications of the Society embrace the three numbers of the Journal of the Natural History Society, six volumes of Proceedings, ten volumes of Historical Collections, and an eleventh volume commenced, some occasional publications, two volumes of the Monthly Bulletin, and five of the Naturalist, this last though afterwards

transferred to the Peabody Academy of Science was inaugurated by the Institute. In 1866 the cabinets contained about 55,000 classified specimens in the various branches of Natural History, and with those in the East India Marine Hall, they now numbered several hundreds of thousands. The Peabody Academy of Science have these in charge, and they are available for use to the members of the Institute and all other students of science on the most liberal terms. In numismatics, ethnological specimens, and manuscripts, there are also considerable collections, and the fine arts, especially the art of music, are beginning to receive special attention. The public have always been invited to participate in the studies, and enjoy the advantages offered by the Institute, upon almost equal terms with members. Finally a printing office has been established which performs typographical work in a style not excelled by any other press in the country.

The address occupied about forty minutes, and was listened to with the deepest interest and warmly applauded at the close. It is printed in the *Historical Collections* of the Institute, vol. xi, No. 1.

"America" was sung by the choir, after which remarks were made by Rev. George D. Wildes of New York, Gen. Henry K. Oliver, J. Wingate Thornton, Esq. of Boston, and Dr. George B. Loring.

The observances of this anniversary were appropriately concluded by a social gathering of the members and friends of the Institute, in the evening, at Plummer Hall, which was entirely informal and conversational.

Mr. David Pulsifer, of the Secretary of State's office, Boston, presented a certified copy on Parchment of the Act of Incorporation of the Essex Historical Society — which was gratefully received.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., MAY, 1871. No. 5.
One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, May 1, 1871.

THE President in the chair. Records of preceding meeting read.

ON THE GEOLOGICAL SURVEY OF ESSEX COUNTY.

Prof. ALPHEUS HYATT showed a series of specimens illustrating, in part, the geology of this county, also a geological map of Marblehead Neck, and offered some interesting remarks in relation thereto, of which the following is an abstract.

This society has had in view for many years past the thorough exposition of the history of this county, both political and physical.

The political history has been well advanced by the numerous papers and essays of prominent members; so also has the Natural History. No attempt could be made however to organize a survey which would strike directly at the accomplishment of this object until funds were provided for the employment of a corps of men and the publication of the results in a systematic manner.

When the Peabody Academy was founded and the collections of this society handed over to its keeping, the

idea of a general Natural History Survey was for the first time definitely announced and provided for in its plan of organization. The Geology fell to my share, and since my acceptance of a position in the Massachusetts Institute of Technology, I have, with the assistance of the fourth year's class of Mining Engineers from that Institution, been able to continue the work.

The first fruit of this labor is exhibited here to-night in a map of Marblehead Neck. The ground-work of the whole is a copy of the Plane Table sheet of the United States Coast Survey, which has been given to me especially for this work through the kindness of Prof. Pierce. The wonderful accuracy of this map is shown by the test to which these investigations have subjected it. The copy before you has been enlarged three times, and is on a scale of .3000 or about eighteen inches to the mile. Notwithstanding this enlargement I have been able to identify every small indentation in the coast-line, and the outline of every projection; as a topographical map for the foundation of a geological survey it is perfect.

The principal intention has been to map out in detail the actual outcrops of rock which project above the surface. These are painted in solid colors. Dark bluish purple shows the porphyry, which occupies the upper two-thirds of the neck and a strip on the harbor-side, reaching to the east end of Devereux beach; dark drab mica-schists and fine-grained gneiss, which fill out the southeastern portion; while patches of vermilion scattered over both indicate the presence of an eruptive granite.

The precise outline of each outcropping or exposed rock was not attempted, but the general direction of the longest axis of each mass is given, and such an approximation to the precise outlines as could be obtained by a

sketch taken on the spot. These are connected by ground shades of the same color, but lighter hue, which indicate to the experienced eye the character of the rock lying under the soil. Thus the theoretical conclusions are separable from the observed facts, and every person can see the face of the country as it is, the conventional signs and colors being readily translated by the table attached to the sheet.

Marblehead Neck was selected as the initial point, because it is one of the three porphyry outcrops within the limits of this county, and from these it is convenient to lay our courses in order to meet the regularly stratified rocks which lie to the westward.

It would be premature at this stage of the investigation to endeavor to forestall the results which may be finally worked out, but it is possible to make certain statements of considerable interest.

The porphyry of our vicinity whether Lynn, Marblehead or Newburyport is a recomposed rock, a conglomerate composed of more or less rounded pebbles of more ancient banded porphyry. Taking our departure from these points we meet in the neighborhood of Newburyport with a transition rock made up partly of porphyry, and then with stratified diorites and slates, which surround the porphyry outcrop on the sea-face, and stretch up to the north and south of Kent's Island, and are lost in the marshes.

The northwesterly dip, and northeasterly strike of these diorites and slates, and the presence of slate rocks in Topsfield and Middleton, are difficult to account for unless we imagine the porphyries to be interstratified with them. The succession of the strata in this part of the county then would be Eozoönal limestones and serpentine, then slates, then the porphyries of Kent's Island

and Lynn, then slates and diorites, and lastly, the porphyries of Marblehead Neck. Either this is the explanation or else we have several anticlinal axes or folds in the porphyry. In either case all the porphyries are probably older than the Eozoönal rocks of Newburyport, and underlie them. The porphyry of Marblehead Neck has the stratified micaceous rocks, mentioned above, lying upon its southeastern face, with dip and strike precisely conformable to the more ancient shore-line formed by the porphyry itself.

The porphyry of Lynn has upon its eastern face the outcropping edges of an enormous overflow of igneous granite, which anciently filled the valley between Peabody village and Swampscott, but which is now only represented by Prospect Hill and others on the west, and patches which still remain plastered against the western sides of the hills to the east.

The farther or westerly side of this porphyry, as also of the Newburyport exposure, is occupied by a series of rocks with a regular northwesterly and southeasterly trend. These overlie the series of serpentines and limestones which crop out so abundantly at Newburyport and Lynnfield. At this last locality the relation of these lime rocks to the porphyries is obscured by masses of what I am disposed to consider an eruptive granite. In fact, all the difficulties of the survey have arisen from the enormous sheet, or rather, sheets of igneous rocks, for there seems to have been several which overspread the surface of the country.

The principal seat of one of these eruptions, and perhaps two of them, can be traced to a large part of Marblehead and the whole of Salem township. The rock underlying these localities is a dense, dark hornblendic, often micaceous granite, varying in many places to lighter

colored and more crystalline. This is, accurately speaking, shattered to pieces by eruptive forces, which have at the same time filled the numberless crevices and hollows between the fragments with one form of the igneous granite alluded to. This is always lighter colored, and often reddish on account of its flesh-colored feldspar. There are perhaps eight or ten square miles of this broken rock, and yet in many places, if the injected granite were removed, every dissevered piece of the dark granite would fit together edge to edge like a consolidated block-puzzle.

It is only fitting here to say that the successful prosecution of the survey must be largely attributed to the encouragement and assistance of Dr. Sterry Hunt. The communication made by this gentleman at the Salem meeting of the American Association, upon the rocks of this region, incited Mr. Bicknell to renew his formerly unsuccessful search at Newburyport for the Eozoön. The subsequent discovery of this fossil and the beginning of the field work were the indirect consequences of this and of his subsequent visits. The President and Directors of the Eastern Railroad have also substantially assisted in the progress of the survey and I have personally received aid from others to whom my indebtedness will be duly acknowledged in more formal publications.

NOTE BY DR. T. STERRY HUNT. In a communication to the *Boston Natural History Society* on the 19th of October last, and subsequently in the *American Journal of Science* for February and March, 1871 (pages 84 and 182), I have expressed the opinion that the porphyries of the eastern coast of Massachusetts, are stratified rocks, belonging together with their associated diorites and slates (greenstones, chloritic and epidotic rocks), to the

Huronian system, or Green Mountain system. As regards the limestones with Eozoön, from eastern Massachusetts, which in the *American Journal* for Jan., 1870, I referred to the more ancient Laurentian system. I have in that same journal for July, 1870, pointed out the fact that the Eozoön of Hastings county, Ontario, occurs in a series of crystalline schists which I consider newer than the Huronian, and the equivalent of the White Mountain gneisses and mica-schists, so that, as I there remark, "the presence of this fossil can no longer serve to identify the Laurentian system. It will be remembered that the *Eozoön Bavaricum* of Gümbel occurs in Bohemia, in a series of crystalline schists above the Laurentian, occupying probably the position of one or the other newer systems just mentioned. I have in the *American Journal* for last March (page 183), moreover, called attention to the fact that the crystalline limestones which are associated with the White Mountain or Terranovan system in Maine, closely resemble in mineralogical characters those of the Laurentian. It will therefore remain for farther study, to determine how far the crystalline limestones of eastern Massachusetts belong to the Laurentian, and whether some of them are not included in one or the other of the newer systems of crystalline schists. The porphyry conglomerate noticed by the late President Hitchcock and described by Prof. Hyatt, are referred to in my paper of last October, mentioned above. This rock is, I conceive, to be distinguished from the old Huronian porphyry, on which it often reposes, and from the ruins of which it is derived. Similar conglomerate porphyries along the shores of the Bay of Fundy appear to be of Upper Silurian age.

GEOLOGY OF THE PHOSPHATE BEDS OF SOUTH CAROLINA.

Dr. A. S. Packard, Jr., made some remarks on the geology of the phosphate beds of South Carolina. During a recent visit to Charleston, he had observed the phosphate diggings on the Ashley river, and at a locality on the northeast railroad eight miles from Charleston, but through the courtesy of C. C. Coe, Esq., Superintendent of the Marine and River Phosphate Mining and Manufacturing Company, and Dr. C. U. Shepard, Jr., he had enjoyed special facilities for studying the Quaternary, or Post Pliocene formation in which the phosphate bed occurs, having made two excursions in company with these gentlemen on the Company's steamer *Gazelle*. He was also indebted to Prof. C. U. Shepard, Sr., for much valuable information regarding the chemical as well as geological history of these interesting beds. Analogous beds have been discovered in the later tertiary of England near Cambridge, but they are becoming exhausted, and manufacturers of superphosphates are now importing large quantities of the crude phosphate rock from Charleston, S. C., as well as the phosphate, or apatite, rock from the Laurentian formation of Canada, which Dr. T. Sterry Hunt, the distinguished chemist of the Canadian Geological Survey, believes to have resulted largely from the decomposition of shells, especially those of *Lingula*.

The phosphate beds of South Carolina are spread over an area along the coast one hundred miles along, and about twenty miles in breadth; the formation is not continuous, being sometimes, as stated (in conversation) by Prof. C. U. Shepard, Jr., replaced by ferruginous sand. It has already been largely used as a fertilizer for worn out lands of the sea island cotton region, and promises from the unlimited supply of the rock, to become a large

industrial interest of the state, six million dollars having already been invested in lands and mining and manufacturing materials by northern capitalists alone.

The relation of the phosphate beds to the Quaternary formation of the state and of the latter to the glacial beds of sand and clay of the northern states, were, however, the principal points he would allude to. At a celebrated locality of Quaternary fossils at Simmon's Bluff on Wadmalaw Sound, about thirty miles by steam from Charleston, he made with the kind and generous aid of Dr. Shepard, Jr., a large collection of fossils, from a bed of sand and mud about four feet in thickness. This bed corresponded with the marine clays of New England and Labrador, and the ancient sea bottom with its multitude of shells, which remained just as they had died in their holes, reminded him of an ancient raised sea-bottom at Hopdale, Labrador.

These clay beds graduated into clay and sand, containing a ferruginous layer, supposed by Dr. Shepard, Jr., to be the horizon of the phosphate beds. These beds correspond to the beds of clay at Gardiner, Maine, where Sir Charles Lyell discovered the bones of the Bison and Walrus, and contains bones of the *Megalonyx*, *Mastodon*, *Elephant*, *Tapir*, two species of *Horse*, *Peccary*, *Rhinoceros* and *Manatee*. The sands graduate into the beach sands of the close of the Quaternary, just as do the Bison and Walrus beds of the Kennebec river. The phosphate beds, then, were probably rolled masses of Eocene rock crowded with shells, mingled with the bones of the animals above mentioned, deposited and arranged by the waves of a shallow sea a few feet deep. This sea was much shallower even than that which covered the ancient sea bottom beneath, which must have been only from one to five or ten fathoms deep, as the same shells are at the

present day thrown up on the neighboring beaches in great abundance, and he had dredged some of them at a depth of from five to thirty feet at Beaufort, N. C.

After their deposition the carbonate of lime of the shell marl of the Eocene rocks had been replaced by phosphate of lime. How this had been effected, and whence the phosphate of lime was derived, was a question still unsettled by chemists. He alluded to the theory of Prof. Shaler that this phosphate deposit had been formed at the bottom of the Gulf Stream, which, according to that geologist had probably flowed over the site of the present phosphate beds; and in opposing the theory suggested that the phosphate beds were deposited in shallow water, perhaps lagoons as suggested by Prof. Holmes, as they rested in a shallow water deposit above alluded to. There was no apparent evidence, as well shown by the facts published by Tuomey in his geological survey of South Carolina, of a depression of the coast. On the other hand there is no apparent evidence of glacial action on the coast, since the Quaternary sands are marine or aerial, and Tuomey states that he has nowhere in the state of South Carolina seen any angular blocks, nor a pebble a foot in diameter. Moreover, the life of the Quaternary in this state indicated even a warmer climate than at present obtains.

Since these remarks were made, he had met by accident with the paper by Desor, than whom no one can speak with greater authority, in which he has made a comparison* between the glacial marine beds of the North and the marine coast deposits of the Southern states, parallelizing the deposits in a masterly manner. His remarks

* Post Pliocene of the Southern states and its relation to the Laurentian of the North and the deposits of the valley of the Mississippi. By E. Desor. *American Jour. Sciences and Arts.* 1852. Vol. 14. p. 49.

entirely confirm the views given above. One difficulty Desor had in parallelizing the Laurentian beds of the North with those of the South containing the remains of land animals, was the apparent absence of the remains of land animals in the clays of the North. But since then teeth of the bison have been found at Gardiner, Maine, in the upper part of the clays. It may also result from farther investigation that the phosphate beds were laid down at a later period than we have supposed; at the time when the great mammals found in the cave at Phoenixville by Mr. Wheatley flourished, perhaps during the earlier portion of the river terrace period when the mammoth and mastodon lived both in the northern and southern states.

Thus, the parallelism between the Quaternary beds North and South would seem to be even more exact than Desor could with his data make it twenty years ago. The climate gradually grew warmer from Labrador to Florida; the Gulf Stream did not apparently change its bed during the Quaternary period; the oscillations of level of the coast of South Carolina were slight and involved but a few feet, where in Canada and Labrador the rise and fall involved several hundreds; and the denudation effected in the North by land ice, was caused in the South by oceanic currents, waves and atmospheric agencies. There are apparently no facts to show that while the glaciers lined the coast of New England, the waters of South Carolina were not as warm, if not warmer, than at the present day, from the effects of the Gulf Stream.

MR JAMES H. EMERTON exhibited the following species of plants in flower which he had collected this afternoon in South Salem and Swampscott, and made some appropriate remarks in relation to them.

Ranunculus sp., near the outlet of Legg's hill ponds.

Ranunculus fascicularis, hillside west of Forest River near Lynn road.

Caltha palustris.

Anemone nemorosa.

Hepatica triloba, Swampscott near Salem line. Sepals dropping from most of the flowers and new leaves half grown.

Aquilegia Canadensis, great pasture, very few flowers open.

Saxifraga Virginiensis.

Sanguinaria Canadensis, Swampscott near Salem line. Leaves as high as the flowers and many flowers without their petals.

Fragaria Virginiana, roadside near Forest River.

Houstonia cœrulea.

Viola cucullata.

Viola blanda.

Acer rubrum, roadside, Swampscott.

Salix, two species on the Eastern Railroad.

Benzoin odoriferum, meadow north of Legg's hill.

Gnaphalium uliginosum, pastures and roadsides.

Erythronium Americanum, near Legg's hill.

Ariscema triphyllum, near Legg's hill.

Carex Pennsylvanica, and another species, great pasture.

Equisetum arvense, Marblehead Railroad near Lynn road.

Equisetum sylvaticum, near Legg's hill with *Erythronium Americanum*.

The Secretary announced the following correspondence :—

From Smithsonian Institution, April 18; Francis H. Appleton, Boston, April 29; Joseph Banvard, Patterson, N. J., April 20; James S. Bryant, Hartford, April 18; A. Crosby, Salem, April 19; Asa Gray, Cambridge, April 19; S. A. Green, April 4; Richard M. Hodges, Cambridge, April 19; J. C. Holmes, Detroit, Mich., April 21; O. W. Holmes, Boston, April 20; Frank E. Hotchkiss, New Haven, April 21; Laburton Johnson, Bradford, April 18; Nathaniel Paine, Worcester, April 20; A. P. Peabody, Cambridge, April 20; G. H. Preble, Charlestown, April 21; W. Hudson Stephens, Lowville, N. Y., April 1; E. M. Stone, Providence, April 22; J. Wingate Thornton, Boston, April 18; B. Westermann & Co., New York, April 19; W. O. White, Keene, N. H., April 28; M. P. Wilder, Boston, April 21.

Mr A. C. GOODELL, Jr. alluded briefly to the plan, for some time in contemplation by the Essex Institute of a survey of the Natural History of the county. He congratulated Mr. Hyatt upon the results of his labors in this direction auguring favorably for the completion ere long of this desirable work.

Remarks were made by Mr. James Kimball and others on the papers presented at this meeting.

The Librarian reported the following additions :

By Donation.

- ANTHONY, H. B., of Washington, D. C. Congressional Directory by B. P. Poore.
- BUTLER, Hon. B. F., M. C. Hoar's Speech in U. S. H. R., March 29, 1871. Edmund's Speech in U. S. S. April 14, 1871. Harlin's Speech in U. S. S. March 29, 1871. Land Office Report for 1868. 3 vols. 8vo.
- CONNECTICUT RIVER RAILROAD COMPANY. Annual Report. 1870.
- GREENE, S. A., of Boston. Miscellaneous pamphlets, 11.
- LEE, JOHN C. Commercial Bulletin for April, 1871.
- PACKARD, A. S. Annual Report on the Injurious and Beneficial Insects of Mass.
- PEABODY ACADEMY OF SCIENCE. Memoirs, Vol. I, No. 11.
- PERRY, REV. W. S., of Geneva, N. Y. Memorial of Rev. Benjamin Dorr, D. D., by Geo. Lewis.
- POORE, ALFRED. Miscellaneous pamphlets, 20.
- PREBLE, CAPT. GEORGE H., U. S. N. Memoir of William P. Fessenden.
- SNOW, E. M., of Providence, R. I. Report of the Births, Marriages and Deaths in Providence for 1868.
- STONE, ROBERT. Commerce and Navigation for 1850-54. 2 vols. 8vo. Report on the Finances for 1856. 8vo. Compendium of the U. S. Census for 1850. 8vo. Hymns for the Sanctuary. 12mo. Psalms and Hymns. 1 vol. 12mo. The Christian Examiner, 1826 to 1860. Quarterly Journal of the American Unitarian Association. 1854 to 1859. The Monthly Miscellany, 1841 to 1843. Year Book of the Unitarian Churches, 1856 to 1870. Monthly Journal of the American Unitarian Association, 1860 to 1869. Miscellaneous pamphlets, 25.
- SUMNER, CHARLES, U. S. S. Sumner's Speech in U. S. S. March 27, 1871.
- WATERS, J. LINTON, of Chicago, Ill. A Western Enterprise. 1871. 8vo pamph. Catalogues of Medals, Tokens.
- YOUNG MEN'S ASSOCIATION, OF BUFFALO, N. Y. Annual Report, Feb. 20, 1871.

By Exchange.

- BOSTON SOCIETY OF NATURAL HISTORY. Proceedings of. Vol. III, sigs. 24, 25.
- BOWDOIN COLLEGE. Catalogue, 1870-71.
- MASSACHUSETTS HISTORICAL SOCIETY. Proceedings of. 1869-70. 1 vol. 8vo.
- NEW JERSEY HISTORICAL SOCIETY. Proceedings of. Vol. II, No. 3. 1871.
- ST. GALLISCHE GESELLSCHAFT. Bericht Vereinsjahres, 1868-69.
- PUBLISHERS. American Naturalist. Canadian Naturalist. Essex Banner. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Literary World. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailor's Magazine and Seamen's Friend. Sotheran's Catalogue. The Book Buyer.

A committee consisting of Messrs. James Kimball, W. Neilson, C. Cooke, W. P. Upham and J. H. Emerton, was appointed to nominate officers for election at the annual meeting.

ANNUAL MEETING, WEDNESDAY, MAY 10, 1871.

THE President in the chair. Records of preceding meeting read.

The following reports on the condition of the Institute were read and accepted.

REPORT OF THE SECRETARY.

In looking back through the record of the year, it becomes the duty of the Secretary to arrange and relate briefly the doings and progress of the Society since the last report. For that purpose it has been found more convenient to dispose of the matter under various heads with the exception of Finance, Library and Museum, which will receive full notice in the reports of the officers of those departments.

Membership.—Twenty-eight persons have been elected and have accepted resident membership, while the loss during the year by death is smaller in numbers than ever before since our society has been so large. Thomas Hunt, died at Salem, May 21, 1870, aged 64 years, 9 months. Daniel Perkins, died at Salem, June 25, 1870, aged 59 years, 4 months. Asahel Huntington, died at his sea side residence in Beverly, Monday, Sept. 5, 1870, aged 72 years. Stephen D. Poole, died at his residence in Lynn, Sept. 22, 1870, aged 53 years, 10 months. Samuel R. Curwen, died at Salem, Nov. 11, 1870, aged 49 years, 10 months.

Correspondence.—This in character and multiplicity continues as extensive as ever.

Publications.—HISTORICAL COLLECTIONS, Vol. X. Parts 2 and 3; and of the BULLETIN, twelve numbers have been issued; also the long delayed and final parts of the PROCEEDINGS.

The BULLETIN, taking the place of the PROCEEDINGS, is now well up to time, and for the coming year arrangements have been made to secure its prompt appearance. This is a very important measure, as it renders the publication more profitable by increasing the number of subscribers and bringing the subscriptions in more promptly.

Meetings.—There have been held of business and public evening meetings, twenty-two; Special, one; Field Meetings, four; at Bradford, Swampscott, West Peabody and Methuen, where the usual courtesy and attentions were extended to the Society by the residents.

At the public evening meetings various valuable and interesting papers have been presented during the winter, to an audience often numbering less than twenty-five persons, yet at other times, when the subject of discussion had been announced in the papers, a fair, and, at times, a large number have attended; this leads to the conclusion that the attendance can be materially augmented by a little previous arrangement, and a notice of speakers and subject in the papers a day or two before the meeting. When we consider the character of these meetings, well repaying the two hours spent at them, it is to be regretted that more do not avail themselves of these free lectures and discussions, the variety of subjects being so great that each must interest some, while none can fail to gain information from all. There have also been a social meeting at Hamilton Hall, and an excursion to Plymouth by steamer, under the auspices of the Institute. The fiftieth anniversary of the formation of the Essex Historical Society was celebrated at the Institute rooms on the twenty-first of last month. An able address was delivered in the afternoon by Mr. A. C. Goodell, and in the evening a company viewed the collections and partook of a collation.

Horticulture.—Three free exhibitions took place in the summer, one each in June, July, and August, the fall exhibition in September lasting three days. These exhibitions were attended by a fair number of visitors. The collection of fruit and flowers, the latter especially, consisted of choicer specimens than were perhaps ever before exhibited at the rooms, showing a more refined taste as well as a greater number of persons interested in Floriculture, the collection being from a larger number of exhibitors than at any previous year, not comprised, as often before, of large showy flowers from a few gardens. By very little effort these exhibitions can be brought to far greater notice in the county and made very much larger, and the society might gain from them a yearly profit, in lieu of barely paying their expenses, as they have every convenience for successfully carrying them forward.

Fair.—During the latter part of October, and the first of November a large fair was held at Mechanic Hall, by the ladies of Salem and vicinity, for the benefit equally of the Salem Oratorio and Essex Institute. It being the opening of the remodelled building, and gotten up with taste, filled with attractive articles, and with many persuasive ways of raising money, the success was such that each society received upwards of sixteen hundred dollars, a sum greatly needed and gratefully received by the Essex Institute.

In General we find the society has improved its time by carrying out its objects and adding to its collections. Many minor improvements have been made during the year and everything kept to the previous standard. There are many things which those immediately interested in the society desire to have done, one—which our President has had in his mind and heart for several years

—the establishing of a Memorial Hall and “Public Library.” Here is a grand foundation, which with private and civil coöperation, might easily accomplish the result, and meet a great want in our city; another that, perhaps, might be accomplished at the same time, is the building of a fire-proof room or hall, where the more valuable and unreplaceable portions of the collections might be safely kept; this would also be the means of enlarging our collections by the great amount of valuable documents and paintings that would at once be given or deposited, if we had the facilities for properly guarding them against fire. However, it is not well to be too aspiring, we must be satisfied with our present condition, and when we think of the entire working income of the society for the past ten years as averaging less than fifteen hundred dollars, and never reaching two thousand, while not many years ago it was mere nothing, the amount that has been accomplished is most surprising, and reflects credit on the head of this society, who has since its formation made a frugal allowance do a great amount of work.

Mr. President:—In retiring from the position of Secretary, I desire to call to mind that a year ago to-day we were regretting the absence of our former Secretary, who had left us during the year for a European tour; his return a few weeks since is opportune, in giving us just time to replace his name on the ballot, where we see it to-day, a position that I am heartily glad to have him fill again and feel great satisfaction in handing the Secretary’s records over to one whose experience renders him so well fitted to perform the duties of the office.

Respectfully submitted.

JOHN ROBINSON,

Sec’y Essex Institute.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3.

SALEM, MASS., JUNE, 1871.

No. 6.

One Dollar a Year in Advance. 10 Cents a Single Copy.

ANNUAL MEETING, WEDNESDAY, MAY 10th, 1871.

[*Concluded.*]

REPORT OF THE SUPERINTENDENT OF THE MUSEUM.

As the report of the Curators of the Historical Department will cover all that has been done in the Museum during the year, there is little for me to report except to state that the collection of antiquities and manuscripts has received the continued care of Messrs. Robinson and Upham, and that their arrangement has been satisfactorily advanced. The many specimens received by the Institute in the Natural History Department have been sent to the Peabody Academy of Science, in accordance with the agreement between the two Institutions, and have been duly acknowledged and cared for by the Academy.

I may be permitted in connection with this report to call attention to the importance of having a person who is thoroughly identified with the Historical Department of the Institute for Superintendent of the Museum, as it is to that department the Museum under his charge is now principally confined, and as my duties at the Academy

render it impossible for me to give the time necessary for the performance of the important duties devolving upon the Superintendent, I must respectfully request that some other person be elected to the office which I have had for so many years the honor of holding.

F. W. PUTNAM,

Supt. Mus. E. I.

TREASURER'S REPORT.

It will be perceived by the following exhibit that valuable additions have been made to the treasury during the year. The legacy of the late Charles Davis of Beverly, of five thousand dollars (\$5,000) ; and donations from friends of fourteen hundred and eighty-two dollars and seventy-two cents (\$1482.72), a nucleus of a publication fund, have been received and invested under the direction of the Finance Committee ; the income arising therefrom to be appropriated in accordance with the request of the donors. The receipts from the Ladies' Fair in November of sixteen hundred and sixty-four dollars and eighty-one cents (\$1664.81) were expended for a piano, settees and other fixtures for the lecture and concert room.

DEBITS.

Athenæum, for rent and Librarian,	\$350.00
Salaries, 688.00; Gas, 49.21; Coal, 156.87,	894.08
Sundries, 151.36; Social meetings and Excursions, 806.80,	958.16
Publications, 1800.00; furnishing Lecture Room, 1465.02,	3265.02
Deposit in Savings Bank, 30.00; Loans, 1642.72,	1672.72
Investment of Davis Legacy,	5000.11
Concerts and Musical Library,	886.62
Balance Account of last year,	160.23

Historical.

Binding, 134.62; Books, 35.00,	169.62
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Natural History.

Binding, 100.00; Books, 11.10; Sundries, 16.70,	127.80
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13,484.36

CREDITS.

Dividends of Webster Bank, 40; Social Meetings and Excursion, 1207, .	1247.00
Life Membership, 30.00; Donations, 1521.72; Sundries, 24.32,	1576.04
Oratorio and Institute Fair, 1664.81; Concerts (two seasons) 1005.38, . .	2670.19
Sale of Publications, 762.91; Assessments, 1330.00,	2092.91
Athenæum, proportion of coal, janitor, etc.,	139.38
C. Davis Legacy, 5000.00; Interest, 190.00,	5190.00
Balance,	335.97

Historical.

Dividends Naumkeag Bank, 26; Michigan Central. R. R., 50.00,	76.00
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Natural History.

Dividends Lowell Bleachery, 80.00; P. S. & P. R. R., 12.87, Horticultural .	
Exhibitions, 64.00,	156.87
	<hr/> 13,484.36

HENRY WHEATLAND,

Treasurer.

LIBRARIAN'S REPORT.

The condition of the Library is good. Attention has been directed to completing the serials, more especially the reports and other publications of the various institutions and corporate bodies, and commendable progress has been made.

As the additions by donations, exchanges and otherwise, have been reported at the regular meetings and printed in the BULLETIN, it is only requisite to present at this time the following statistics:—

Donations.—Folios, 20; Quartos, 46; Octavos and lesser folds, 879; Pamphlets and Serials, 4,449; Almanacs, 62; Total, 5,456.

Exchanges.—Quartos, 5; Octavos and lesser folds, 227; Pamphlets and Serials, 1,791; Total, 2,023.

The Donations have been received from one hundred and forty-seven individuals, and sixteen societies and incorporated bodies; the Exchanges from eighty-five different societies and incorporate bodies of which thirty-nine are foreign.

W. P. UPHAM,

Librarian.

The President made the following communication :

The subject of erecting a Monument, a Memorial Hall, or of testifying by some mark of esteem to those who took part in the recent war for the Union, has been discussed in the newspapers and in the social circle. The City Government has also had at different times several plans under consideration, but no definite action has thus far been taken.

It has also been frequently stated with much regret that Salem has no Public Library, and that in this respect she is far behind her neighbors, Lynn, Peabody, Danvers, Beverly, Ipswich, Georgetown, Newburyport and other places, which each have a well sustained Library. In most of these cases the liberality of one or more of its citizens, or of some of its sons, who have been fortunate in commercial or other enterprises elsewhere, remembering the places of their birth and childhood with grateful feelings, gave the first impulse. Thus, Mr. George Peabody founded those at Peabody, Danvers, and Georgetown, and contributed a liberal fund to the one in Newburyport, which owes its origin to the generosity of Mr. Little. Mr. Heard erected a building, furnished a collection of books and a fund, for at least its partial support, in the town of Ipswich. The Public Library in Boston was indebted largely, in its incipient stages, to Mr. Joshua Bates. Mr. Albert Fearing followed the example of Mr. Heard, and founded a library for his native town of Hingham. Mrs. Eben Sutton founded a reference library in Peabody, in connection with the Institute of that place. The Messrs. Smith and Dove contributed liberally to one in Andover, and also built at their own expense a beautiful building for the library of the Theological Seminary there located. Many instances of a similar character can be cited.

Let us look at the condition of things in Salem. The

Salem Athenæum, founded many years since by the wisdom of those far seeing people who resided here in the early part of this century, possesses some fifteen thousand volumes in the various departments of the arts, literature and science, and a building erected from funds bequeathed by Miss Caroline Plummer. This lady, presuming that the Athenæum Library might at some future time be thrown open to the public, provided in her will that if the said library should ever become a public one, her bequest should not be forfeited.

The Essex Institute has accumulated a library of some twenty-five to thirty thousand volumes and about one hundred thousand pamphlets systematically arranged for reference and consultation; also a goodly collection of portraits of the old worthies of Salem; manuscripts, specimens of currency, historical relics, etc., which are deposited in Plummer Hall. The scientific collections, which are very extensive, having been deposited with the Trustees of the Peabody Academy of Science in East India Marine Hall.

Cannot some arrangement be made so that these two libraries, with that belonging to the Salem Charitable Mechanic Association, and perhaps others, be united, and thus form a basis for a noble public Library? Are there not some Mæcenases to furnish the amalgam that will cement the union, and thus bring about this glorious result?

Furthermore, on the land in the rear of Plummer Hall, a safe and fire-proof building could be erected, which might be a MEMORIAL HALL, consecrated to the memory of those who have devoted their lives to the preservation of the Union during the crisis through which this nation has recently passed. Let this building be a place of deposit for the portraits and other memorials of those who first

laid the foundations of this place ; of those who have conducted the affairs during the several periods of her history ; and, above all, of those who took part in the recent war for the preservation of the Union. This building would also be a suitable depository for an Art Museum, which now is becoming an essential aid to the proper education of the people.

The care and management of the library and the Memorial Hall, could devolve upon a board of Trustees, selected by the city and the various institutions that may contribute to this object.

To this end it is necessary that not only the City Government, but the people, one and all, should aid in this undertaking to the extent of their respective means, and work with the determination that success shall crown their efforts. Let us make a beginning, and we shall soon have a Public Library that will compare favorably with those of other places in the Union, material which will be a good nucleus for a valuable Art Museum, and a very rare collection of antiquarian relics.

Thus, while we shall be doing honor to those to whom we owe so much, we shall provide a suitable depository for works of art and historical relics, for the education and improvement of the people.

This communication was referred to a committee, consisting of the President, Vice Presidents and Secretary, with the request to report whenever a plan for the realizing of any of the suggestions therein contained should be sufficiently matured for the action of the Institute.

George H. Perkins of Salem and George Haskell of Ipswich were elected resident members.

The following officers were elected for the ensuing year, and until others shall be chosen in their stead : —

President.

HENRY WHEATLAND.

Vice Presidents.

Of History — A. C. GOODELL, JR. *Of Horticulture* — WM. SUTTON.
Of the Arts — GEO. PEABODY. *Of Natural History* — F. W. PUTNAM.

Recording and Home Secretary.

AMOS H. JOHNSON.

Foreign Secretary.

A. S. PACKARD, JR.

Treasurer.

HENRY WHEATLAND.

Librarian.

W. P. UPHAM.

Superintendent of the Museum.

JOHN ROBINSON.

Curators of Historical Department.

W. P. Upham, M. A. Stickney, John Robinson.

Curators of Natural History Department.

H. F. King, C. M. Tracy, William Neilson.

Curators of Department of Horticulture.

John Robinson, Caleb Cooke, James H. Emerton.

Curators of Department of the Arts.

James A. Gillis, F. H. Lee, H. F. G. Waters.

Lecture Committee.

James Kimball, George Perkins, Wm. Northey, Wm. Neilson.

Finance Committee.

J. C. Lee, R. S. Rogers, James Upton.

Field Meeting Committee.

A. W. Dodge, C. M. Tracy, E. N. Walton, Caleb Cooke, A. B. Hervey.

Library Committee.

J. G. Waters, Alpheus Crosby, H. M. Brooks.

Publication Committee.

A. C. Goodell, Jr., F. W. Putnam, R. S. Rantoul, H. M. Brooks.

REGULAR MEETING, MONDAY, MAY 15, 1871.

Mr. James Kimball in the chair, after the reading of the records and announcement of recent donations to the Historical departments and the Museum, the Secretary, Dr. A. H. Johnson, presented some

MEMENTOES FROM THE RECENT FRANCO-GERMAN WAR.

These were collected by the donor in the vicinity of Paris from the battle field of Mt. Avron, from Fort Rosny, and the grounds about St. Cloud. They included pieces of German bombs, a fragment of a gun carriage, and a portion of marble from the ruined Palace of St. Cloud. In his narrative of the circumstances under which these mementoes were obtained, the secretary stated that at the time the German troops made their triumphal entry into Paris, the French expressed their aversion to their conquerors with a childish sulkiness. The faces of the public statues were concealed with black veils. The shops and restaurants accessible to the Germans were closed. Some adventurous dealers who furnished food and drink to Prussian soldiers speedily found their gains cancelled by the demolition of their windows and counters. At night the streets were unlighted, not because there was no gas, but in order that the hated invaders might not see the magnificent city which lay at their mercy. It was an aggravating circumstance that the pale light of the moon revealed in some measure the magnificent buildings and Boulevards. By day, many of the Parisians avoided the quarters of the city occupied by the Germans, avoided even looking upon the marching columns of their foe, and shrunk in turn from being seen by them. The stranger from a neutral power enjoyed at this time unusual facilities for visiting localities which had acquired peculiar interest during the recent con-

flicts. If provided with a proper passport, he was allowed to cross the French lines, although not unchallenged, yet unmolested, and after a drive of a few hundred yards, would find himself in a district occupied almost exclusively by Germans. Hardly a villager belonging to the small villages outside the city walls, had ventured to remain by his property. The triumphant Germans were filled with content, and good nature, and cordially courteous to the few Americans who came to inspect the obstacles which had been overcome, and to learn the dangers German heroism had faced and survived.

It was owing to this condition of the troops, that a common travelling pass bearing the official seal and endorsement of the foreign department at Berlin, dated four days previous, secured for its bearer admission to forts Valerian and Rosny, and past German sentries to the heights of Mt. Avron.

With the exception of such relics of the late battles as the German troops had removed, the field of conflict seemed ungleaned. Although it was well known that terms of peace had been signed; during a day's ramble among the forts and over battle fields but a few miles outside Paris, not a Frenchman was met. Fragments of shell of which those exhibited were specimens, lay thickly strewn over the heights of Mt. Avron, and showed at a glance, how untenable the Germans, by their concentrated fire, had made this advanced position of the French.

The effect of the German fire upon Fort Rosny, one of the most severely bombarded of the works about Paris, showed the impracticability of large barracks in the interior of forts. For such buildings furnish an excellent mark for the enemy, and precarious shelter for troops. The large stone buildings in Rosny had been, as it were, eviscerated by exploding bombs, and converted

into heaps of ruins within bare stone enclosures, while the external walls of the forts seemed to have sustained no injury which could not be quickly repaired by night work.

On driving over to the grounds about the Palace of St. Cloud, it was surprising to find the ruins of the Palace so little frequented by curious visitors. Amid the ruins there were many things worth removal for curious keepsakes, and the ornaments about the Palace gardens broken by shot and shell offered many a tempting fragment to the visitor. It is not to be wondered at, that at a later day, foreigners visiting this unprotected property, should yield to the demoralizing influence of the surrounding ruin, and almost with the feeling that they were saving from oblivion some precious relics, bring away with them portions of broken statues, and even break portions from others already hopelessly disfigured, by the iron rain which had fallen about them.

With the mementoes above enumerated, Dr. Johnson also presented some specimens of the "Erbs wurst" or Pea-sausages, so largely used as rations by the Prussian army, and commemorated in the verses of Hans Breitmann when describing "Breitmann in Bivouac"—

"He sits in bivouacke,
By fire, peneat' de drees;
A pottle of Champagner
Held shently on his knees;
His lange Uhlan lanze
Stuck py him in de sand;
While a goot peas-poodin' sausage adorns his oder hand."

These sausages were invented by a German cook by the name of Grünberg who sixteen years ago furnished similar ones for a marine expedition to Japan. Since that time having improved his invention, Counsellor Engelhard at the beginning of the late war, recognized the importance of the production—tested it with the third army

Corps and the Guards, and soon contracted for one million of these sausages, assuring to the inventor a premium of thirty-five thousand thalers. Before the needs of the government were supplied, Engelhard's manufactory produced about *nine million pounds* of "Erbs wurst." They are made from ground peas and *fat* pork intimately mixed, and compressed into a large intestine. They are in size from five to eight inches long and three inches in diameter. A section three inches long from one of these cylindrical masses, when dissolved in boiling water, furnishes a hearty meal for one man, containing as it does a suitable proportion of vegetable and animal food.

These specimens presented to the Institute were given to the donor by Fraülein von Bismarck, a cousin of Prince Bismarck, who with self-denying patriotism imitated by many German ladies of noble family, had left her comfortable home to watch over the interests of the wounded soldiers at the hospital barracks at Berlin. There she took charge of the cooking department which was a pattern of system and cleanliness. From the stores she presented these specimens of condensed food, which are now, according to a pledge to her, deposited in the historical collections of the Institute.

The manufactory which furnished the "Erbs wurst" employed two thousand men at one time, produced one hundred and twenty thousand pounds of "Erbs wurst," and two hundred thousand pounds of other conserves, and worked over the flesh and bones of six thousand oxen.

The secretary presented also specimens of silver ore from the mines of Saxon Freiberg, giving at the same time an account of a descent into these mines.

F. W. PUTNAN gave a very clear and instructive description of the process of manufacturing type.

The PRESIDENT presented a map of Hawaii exhibiting the volcanic eruptions of 1822-1840-1852-1855-1859, and 1868, given to the Institute by Stephen H. Phillips, Esq.

The LIBRARIAN announced the following additions since the meeting of the 10th inst :

Donations.

- BEAMAN, CHARLES C., Jr. The Alabama Claims. 1 vol. 8vo.
 BUTLER, Hon. B. F., M. C. Porter's Speech in U. S. H. R., April 4, 1871. Butler's Speech in U. S. H. R., April 20, 1871. 8vo pamph.
 CITY OF BOSTON. Boston City Documents for 1870. 3 vols. 8vo.
 DEPARTMENT OF THE INTERIOR. U. S. Geological Survey of Wyoming and Contiguous Territories. 1870. 1 vol. 8vo.
 FOOTE, CALEB. Files of several county papers for Feb., March and April, 1871.
 GREEN, S. A., of Boston. Miscellaneous pamphlets, 14.
 HYATT, A. Miscellaneous pamphlets, 25.
 JOHNSON, SAMUEL. The Worship of Jesus. 12mo pamph.
 PERKINS, GEO. A. The Spirit of Missions, 19 Nos. The Schoolmate, 4 Nos. History of the Worcester Family. 1 vol. 8vo. The Court and City Kalendar of London for 1766. 1 vol. 16mo. Farmer's Almanacs from 1804 to 1862 inclusive. Miscellaneous pamphlets, 13.

Exchanges.

- BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles, Nos. 156, '7, '8. 1870-71. 3 pamphlets, 8vo.
 BOSTON PUBLIC LIBRARY. Bulletin for April, 1871.
 IOWA STATE HISTORICAL SOCIETY. Legislative Documents for 1870, 2 vols. 8vo. Legislative Supplement, 1870, 1 vol. 4to. Laws of Iowa, 1870. 1 vol. 8vo. House Journal, 1870. 1 vol. 8vo. Iowa Insurance Reports, 1868, '69. 2 vols. 8vo. Iowa Agricultural Report, 1869, 1 vol. 8vo. Census of Iowa, 1869, 1 vol. 8vo. Geology of Iowa, 2 vols. 4to. Senate Journal, 1870. 1 vol. 8vo. The Annals of Iowa for April, 1871. 8vo pamph.
 MASSACHUSETTS HISTORICAL SOCIETY. Collections of. Fourth Series, Vol. IX. 1 vol. 8vo.
 NEW YORK STATE LIBRARY. Annual Report of the Trustees, 1871.
 NEW YORK LYCEUM OF NATURAL HISTORY. Annals. Vol. IX. No. 13.
 PUBLISHERS. American Literary Gazette. Christian World. Eclectic. Essex Banner. Gardener's Monthly. Gloucester Telegraph. Hardwicke's Science Gossip. Haverhill Gazette. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Nation. Nature. Medical and Surgical Reporter. Peabody Press. Salem Observer.

The SECRETARY announced the following correspondence :

Boston Society of Natural History, May 5; Iowa State Historical Society, May 4; Charles C. Beaman, Jr., New York, May 6; John T. Carter, Salem, May 15; A. L. Huntington, Beverly, May 14; A. Lackey, Haverhill, May 1; W. Neilson, Salem, May 12; J. Pearson, Schenectady, N. Y., May 4; Geo. H. Preble, Charlestown, May 1; A. A. Scott, Saugus, May 8.

FIELD MEETING AT NORTH BEVERLY, JUNE 15.

THE RAMBLE.

THE Institute, with her ripe experience in Field Meetings, was not to be allured, by the almanac announcement that spring was present, into rambles over fields doubtfully released from the dominion of winter—wet, cold, and showing only at wide intervals, the green of some venturesome plant pitifully striving for life; it might find its own predicament too exactly typified in some of the stunted plants, which, alternately cheered by days of sunshine and disheartened by nights of frost, seemed repressed and discomforted. Young enough to be enthusiastic, the Institute is now far enough removed from extreme youth to have her enthusiasm tempered by good judgment, therefore she selected a day in the middle of the first month of summer, to lead her disciples and friends for the first time this year, into fields well stored by nature with forms of life. But

“The best laid schemes o’ mice an’ men
Gang aft a-gley.”

The morning which should have proved inviting, threatened to drench all who should venture from shelter, and these threatenings kept so many cautious persons at home, that not more than one hundred ladies and gentlemen presented themselves for the start.

The region selected for examination, was in North Beverly. To reach it, the excursionists from Salem took an early train at the Eastern Railroad depot. On dismounting, after a brief ride, Mr. Daniel Welch appeared and greatly lightened the cares, and added to the comfort of the party, by taking the provisions and all superfluous baggage to Mystic Hall, where in due time the collation was to be served.

The chief objects of interest in this locality are Wenham Lake and the Salem Water Works upon its shore. To these more permanent features, nature, but four days previous, had added the fortunately rare spectacle of the path of a tornado, clearly defined by uprooted trees, and houses demolished or twisted from their foundations.

Wenham Lake, by reason of the picturesqueness of its situation and the quiet beauty of its shore, has long allured innumerable visitors, who have widely spoken its praise. The selection of its waters to supply the city of Salem, and the consequent construction of the necessary reservoir and machinery upon its border, have greatly added to its local reputation. But the purity of its waters have long given it a *transatlantic* fame. About the streets of London, and other English cities, one frequently sees upon carts and signs, the words, "Wenham Lake Ice." Probably not one-half of the ice thus advertised, has really crossed the seas. We are suspicious that the genuine value of the word Wenham, prefixed to ice as indicative of excellence, has proved too great a temptation to dealers who would affix some superlative term to their productions.

The reservoir on Chipman's Hill, and the engine and pumping machinery, together with all the apparatus of the Salem Water Works, received the first attention of the Institute party. For here was not only one of those proofs of human power, which make one more pleasingly conscious of the possibilities of manhood, but enhancing the beauty of the machinery, more than the floral decorations, was the sense of partial ownership, which each citizen of Salem might rightly feel.

Capt. Daniel H. Johnson, the superintendent of the works, by his clear and patient description of their details, won the gratitude of the entire party.

A few of our number visiting the outlet of the lake, were fortunate in witnessing the passage of the dam by thousands of Alewives, on their way to the ocean. Mr. Putnam directed attention to a peculiar manœuvre of the fish, and stated that it was a habit of all species, to turn the head up stream and to pass over falls tail foremost. By this means they escape two dangers; one, that of strangulation, which might otherwise occur from the water coming violently in contact with the delicate membrane of their gills, the other that of fracture of their scales, the latter by no means a light injury, since the place of the broken scales soon becomes the site of a fungous disease which is quite generally fatal.

Other interesting localities were not neglected by our ramblers. Several old buildings and landmarks were duly inspected by those especially interested in antiquities; at half past one o'clock all repaired to the hall, where the collation stood in waiting and received due attention.

At 3 P. M. the meeting for discussions and reports was held in the church, and Hon. Allen W. Dodge, was invited to preside. Records of preceding meeting read.

The SECRETARY announced the following correspondence :

Boston Public Library, May 26; Buffalo Historical Society, May 22; Buffalo Society of Natural Sciences, May 31; New York Historical Society, May 20; New York Mercantile Library Association, May 23; New York State Library, May 30; Ohio Historical and Philosophical Society, May 25; Quebec Literary and Historical Society, May 30; Western Reserve and Northern Ohio Historical Society, June 12; William Clagston, Springfield, May 23; J. Colburn, Boston, June 8; E. H. Dalton, Taunton, June 2; Frank E. Hotchkiss, New Haven, May 19, June 2; Andrew W. Morgan, New York, May 24; Edwin Noyes, Waterville, Me., June 12; J. Prescott, Boston, June 8; M. A. Stickney, Salem, May 24; Westernman & Co., New York, May 26.

The LIBRARIAN reported the following additions :

By Donations.

ALLEN, J. F. Patent Office Reports, 1848 to 1854, 4 vols. 8vo. Report on Agricul-

ture, 1865 to 1868, 5 vols. 8vo. Christian Examiner, 95 Nos. Journal of Foreign Literature, 8 Nos. Boston Cultivator, 48 Nos. Christian Register, 53 Nos. Journal of the American Unitarian Association, 126 Nos.

ALMON, A. B. Miscellaneous pamphlets, 75.

BENSON, L. B. A Dissertation on Geometry. 12mo pamph.

BOARD OF PUBLIC CHARITIES OF PENNSYLVANIA. Report for 1870, 1 vol. 8vo.

BROOKS, C. T., of Newport, R. I. Roman Rhymes, 12mo. Cambridge, 1869.

CANADIAN GEOLOGICAL SURVEY. Geology of Canada, 1866 to 1869, 1 vol. 8vo.

CITY OF SALEM. City Documents, 1870-'71, 1 vol. 8vo.

CLEVELAND, Mrs. W. S. Miscellaneous volumes, 143. Columbian Sentinel, 37 Nos. Essex Register, 71 Nos. Miscellaneous pamphlets, 25.

ESSEX AGRICULTURAL SOCIETY. Transactions. 1870. 8vo.

GREEN, S. A., of Boston. Report of the Boston Provident Association, 1861-'67. 1 vol. 8vo. Miscellaneous pamphlets, 13.

HEWES, JAMES T. Miscellaneous pamphlets, 21.

LEE, JOHN C. Commercial Bulletin for May, 1871.

MORSE, E. S. Miscellaneous pamphlets, 21.

NATIONAL ASSOCIATION OF WOOL MANUFACTURES. Bulletin, April, 1871.

PAINE, NATH'L, of Worcester. Worcester Directories for 1868-'69-'70, 3 vols. 8vo.

PUTNAM, Mrs. EBEN. Andrews against Universalism, 1 vol. 12mo. Dictionary of Self Knowledge, 1 vol. 8vo.

SUMNER, CHARLES, U. S. S. Report on Agriculture for March and April, 1871.

WALKER, FRANCIS. Notes on Chalcidiae, 12mo pamph., 1871.

WHEATLAND, STEPHEN G. American Law Register, 28 Nos. Miscellaneous pamphlets, 25.

Exchanges.

ARCHIV FÜR ANTHROPOLOGIE. Vierter Band, 4to. Braunschweig, 1871.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles, No. 159.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings, Vol. XIII, sigs. 26, 27, 28.

GEORGIA HISTORICAL SOCIETY. Constitution, By-Laws, and List of members. Savannah, 1871.

HOTCHKISS, FRANK E., of New Haven, Conn. New York Farmer, 1 vol. 4to, New York Directory, 1864, 1 vol. 8vo. Ohio Statistics, 1 vol. 8vo. History of the North Church in New Haven, 1 vol. 8vo. Memoirs of the Connecticut Academy, Vol. I, Part I. Tales of the Puritans, 1 vol. 12mo. Miscellaneous pamphlets, 133.

KÖNIGLICH BAYERISCHEN AKADEMIE DER WISSENSCHAFTEN, IN MÜNCHEN. Sitzungsberichte, II Heft 1-4, 1870; Denkschrift auf C. E. H. von Meyer, von C. A. Zittel, 1870.

MARYLAND HISTORICAL SOCIETY. A Lost Chapter in the History of the Steamboat. By J. H. B. Latrobe. 8vo pamph.

SMITHSONIAN INSTITUTION. Contributions to Knowledge, Vol. XVII, 4to, 1870.

SOCIETE DE PHYSIQUES ET D'HISTOIRE NATURELLE, IN GENÈVE. Memoires, Tome XX.

TAUNTON PUBLIC LIBRARY. Report of the Trustees, 1870.

VEREINS FÜR ERDKUNDE, in Darmstadt. Notizblatt, III Folge, IX Heft, 1870.

ZOOLOGISCHE GESELLSCHAFT. Zoologische Garten, XI Jahrg., Nos. 7-12, 1870.

PUBLISHERS. American Literary Gazette. American Naturalist. Christian World. Eclectic. Fireside Favorite. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Literary World. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailor's Magazine. Salem Observer. Silliman's Journal. Sotheran's Catalogue.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., JULY, 1871. No. 7.

One Dollar a Year in Advance. 10 Cents a Single Copy.

FIELD MEETING AT NORTH BEVERLY, JUNE 10th, 1871.

[Continued.]

TORNADO, OR CYCLONE, AT WENHAM.

MR. DODGE said, that since the appointment of the meeting, there had occurred in this immediate neighborhood, an event so rare in New England and of a character so fearful and destructive, he would make it the subject of his remarks. He alluded to the tornado or cyclone of the Sunday previous, which passed within a mile of his own residence, and the effects of which he had himself witnessed. The first we heard of it in this vicinity was just before five o'clock P. M., at or near Swan's crossing in Danvers, where it was seen by two men as they were riding by, to whom it had the appearance of a column of vapor and dust rushing past in a north easterly direction, but doing no damage. It was next seen by Daniel H. Johnson, the Superintendent of the Salem Water Works, whose duties called him that day to Wenham Lake. From him is the following graphic description.

“It was my good fortune last Sunday afternoon at a few

minutes past five to be at the ice houses, near the northerly side of the lake, and see the cyclone come towards me across the lake, pass by within two hundred feet, in its course of destruction through Wenham, Hamilton and Essex.

My party were awaiting a shower to pass over, and were standing in a sheltered spot admiring the beauties of the thick heavy black clouds, passing over our heads in an easterly direction while a lower stratum of air near the earth was moving in a north easterly direction as indicated by a vane on the ice houses. The clouds kept shutting in closer, it was growing darker and darker, the wind blowing a gale, when across the lake comes a water-spout, as I supposed, in the shape of a tin tunnel such as is used in filling bottles, the broad mouth being thousands of feet in diameter away up in the clouds, the small end but fifty to one hundred feet in diameter touching the water.

The water-spout in its passage across the lake was taking up water all the while; the wind increased in violence bringing a wave nearly three feet high along with it, which washed well up on to the road near where we were standing. A large dory anchored a short distance from us was lifted into the air, twisted around like a top and fell bottom upwards into the lake. We ran so as to be as near as possible, and were but two hundred feet distant, when it struck a gravel-bank and orchard just to the west of the highway which offered considerable resistance, when up go the gravel, large stones, rail fences, hundreds of feet into the air appearing like ribbons,—twisting trees right out of the ground by the roots, and branches fly in every direction. We watched it move on until in three or four minutes it was out of sight, when it strikes a plowed field—the tunnel being black with loam from the earth away into the clouds—

then strikes a barn while the timbers and boards fly in every direction.

Its course was a remarkably straight line a few points to the north of east. The whizzing noise of the cyclone was terrific, ten times louder than the hum of our cotton factory, and the whole scene was peculiarly grand, wild and fearful."

Mr. Dodge resumed his remarks :

Continuing its course over fields, hills and valleys, here and there uprooting trees, it struck upon the road that leads from Wenham Centre to the Neck, where it made sad havoc of an orchard belonging to Abraham Dodge, demolishing his barn, as also a barn of Simeon Dodge in which was a valuable horse that escaped harm as if by a miracle. Passing on with fearful speed, it was seen to uproot large trees and even to whirl them along in the air, to overturn stone wall removing portions of it to some distance. It next struck the house, barn and out-buildings on the farm occupied by Asa W. Trout, on the easterly spur of Brown's hill in Hamilton, and here it seems to have spent its fury. The roof was lifted from one side of the house and deposited in fragments on the ground and the windows were smashed in on the side most exposed. The barn was made a total wreck and the pieces strown in all directions, large oak timbers being carried to some distance. An orchard on the side of the hill consisting of a large number of stalwart trees that had defied the storms of nearly a century, were twisted up by the roots and their branches and leaves coated with dirt that had been caught up by the cyclone as it crossed a neighboring corn-field. Even a horse that was feeding near the barn, was taken up bodily and dropped in a field some ways off and has not got over the injuries caused by his involuntary jaunt in the air. Thence, the cyclone

took its course towards Chebacco pond, levelling some pine and other trees, till it reached Essex doing but slight damage there and so passed out to sea.

What is not a little remarkable, is the occurrence the same afternoon in the interior of the State of a similar or the same cyclone, of which the following account appears in the newspapers.

“A terrible tornado passed through the towns of Paxton, Holden and West Boylston, Sunday afternoon, demolishing every building in its track and tearing up trees by the roots. In the town of Paxton it demolished the barn of L. N. Parkhurst and blew off one gable of his dwelling house. From there it went in a northeasterly direction, and blew down the buildings of Mr. Bigelow, on the old town farm. Thence it went through the woods sweeping all before it and striking the house and barn of Lewis Martin, in Holden, entirely demolishing both. The village of Holden was next taken in its destructive march, and here five barns, three houses, and one carpenter shop were blown down. Three persons were injured, one, Charles Burrett seriously. A strip of heavy stone wall, some twenty rods in length, was completely blown over, and large trees were blown thirty rods, with upward of a ton of earth upon their roots. The tornado appeared to move at the rate of seven miles an hour and was not more than ten rods in width.”

Mr. Dodge then stated that in his opinion these cyclones were one and the same, that at the interior being the beginning of that which ended at Essex, and for this opinion he gave the following reasons.

1st. The direction in which they passed was the same. By drawing a straight line on the large map of the State published by the Legislature a few years since, through Paxton, Holden and West Boylston, it would

also pass in a north easterly course through Swan's crossing over Wenham Lake, to Brown's hill and that part of Essex where the cyclone was last seen.

2d. The time of the occurrence of the cyclones was the same, allowing for the time it would take in its travelling between the two termini, at the rate of seven miles an hour, as it was estimated to have travelled, beginning at four and one half o'clock P. M. and finishing at a little past five o'clock of the same day.

3d. The width of the track — or in other words, the diameter of the cyclone — was the same in both cases from one hundred and fifty to one hundred and sixty feet; wherever there was any means of measuring the track, it varied but little from this width.

4th. As cyclones are of so rare occurrence in New England, it is more probable that this occurring not only on the same day but at nearly the same hour, moving in the same direction at the same rate of speed and of the same width, should be one and the same rather than that there should be two cyclones, separate and distinct in their origin and yet each combining all these elements.

But it may be said that if this be so, why was not its pathway across the country as distinctly marked as it was at both ends? To this it may be replied that the face of the cyclone may have been more or less intensified by circumstances or causes unknown to us, or the tunnel-shaped volume of vapor or other matter of which it was composed, may have been so drawn up at intervals as to do no damage. But it would be presumptuous for him to attempt a satisfactory solution of the question proposed, when the books that treat of the subject of cyclones, tornadoes, whirlwinds and other similar phenomena, leave the reader quite in the dark upon many points of enquiry.

The lines of demarcation between them seem to be somewhat confused. But the following points seem pretty clearly established.

Tornadoes over the sea are accompanied often with one or more complete water-spouts and over the land with partial water-spouts or with columns of dust. There is a close similarity of these phenomena. Tornadoes frequently burst forth upon the land suddenly, perhaps first on the side of a mountain and moving forward along a straight or curved track, with dark clouds moving towards the sea, while a breeze may be blowing in an opposite direction. They show their terrific force by overturning, uprooting, breaking or twisting off trees; by demolishing buildings or lifting these and other heavy bodies into the air to scatter their parts around at great distances, or sometimes to set them down again nearly unharmed; by lifting other objects, such as the beasts, persons, and sometimes even large cannon, and transporting them to considerable distances, destroying crops and farm improvements of all kinds in their course. As a rule the energy of the wind and the havoc it produces are greatest near the circumference of the whirl, and places over which at any moment its centre is situated may experience for the time an almost total lull of wind, to be renewed however in all its violence as the posterior margin of the whirl reaches them. This whirling motion is universal, and shows that the phenomena are in all cases associated with, or dependent on some form of whirling wind. Abundant facts prove that very heavy objects can thus be elevated and suspended for a considerable time before they are allowed to fall, though we are as yet unable to understand exactly in what manner so great a lifting power is exerted on those objects.

Hurricanes prevail more particularly, and with the

greatest fury in the torrid zone, always however at some distance from the equator, which they never touch or cross. In the polar regions they are unknown, but they occur occasionally in the temperate zones. In 1831, Wm. C. Redfield published in the "American Journal of Science" the first of a remarkable series of papers upon the phenomena of storms, in which he clearly established the fact that storms are progressive whirlwinds of a large diameter, and, what is remarkable, as is now well ascertained, those in the southern hemisphere rotate in an opposite direction from those in the northern, the former turning in whirls with the hands of a watch placed face upwards, the latter in the contrary direction to the movement of the hands of the watch. Mr Redfield subsequently suggested, what is now an accomplished fact, that the telegraph was likely to prove a most valuable instrument in giving notice of the approach of storms and hurricanes, and that to the United States it would prove more specially valuable when extended to the West India Islands.

From the accumulation and induction of facts in the domain of nature, are often deduced with absolute certainty the great laws — laws uniform and fixed — that control and regulate every department of that vast domain. The humblest observer and worker in our own Essex Institute — may her shadow never be less! — helps to this discovery by patient waiting and knocking for a response from the great mystery within, not growing weary or discouraged because it cometh not in a day, in a year, or in a series of years, but recording well ascertained facts for those who may afterwards take his place and so keeping up the line of waiters and watchers till the darkness flee away, and the bright light of morning gild the horizon.

Mr. F. W. PUTNAM was the next speaker. After a few remarks on the Cyclone and the track it had left, he alluded to the dust storms and the importance of collecting dust from such storms, when they occur, for microscopical observations, as the dust often contains, in abundance, interesting diatoms, etc., brought from a distance and from unknown localities. He then spoke of

THE FISHES COLLECTED IN THE LAKE.

There were two species of pickerel, two of sun fish, the perch, three of the shiner family, a sucker, the eel, the little darter, the horned pout and the alewife. The last was very abundant at the outlet as the water commissioners had kept the dam closed for a day in order that the members of the Institute should see the descent of the fish on their way to the sea. He then explained why it was that the fish all went over the dam tail first, as the water in the rapid current would otherwise be forced under the gill covers and destroy the delicate gills, while at the same time suffocating the fish, as the structure of the gills is adapted for allowing the water to be taken in at the mouth passing over the gills and out under the gill cover. It is owing to this fact that a fish, when quiet in the water, always keeps its head up stream if there is the slightest current, and the whole structure of the fish, including shape, scales and fins, is perfectly adapted to this purpose.

The alewives, which were now on their way to the sea, were all adult fishes that had entered the lake about the middle of May and had deposited their spawn along the shore. They were now returning to their winter quarters in deep water off our coast (for he did not believe that they migrated far south, as was generally supposed), and would return to the lake each season for the same

purpose, until their work and short lives were done. Young alewives, transparent little fellows about an inch in length, and not long hatched, were noticed swimming in small schools along the edge of the lake. These were the young from the eggs laid by the very fish that were now so anxious to return to the sea, and these young would follow in three or four months, when they would be about four inches in length, and they would return to the place of their birth, as full grown fish, in their third year.

The alewives are very prolific, each female laying about one quarter million of eggs, and though, possibly, not over one tenth of these eggs results in the production of full grown fishes, yet this tenth would give an immense number of young fish developed in such a body of water as Wenham Lake—say twenty-five million young for every thousand adult females that enter the lake. There was a time when the alewives must have swarmed into the lake by the hundreds of thousands, but their free run to and from the sea has been cut off by the erection of dams, the using of water and the excessive fisheries, to such an extent that now but comparatively few enter the lake, though, thanks to the noble work of our State Commissioners of Fisheries, in connection with the commissioners of the other New England States, the alewife with its cousin the shad, and the brilliant trout and silvery salmon, are fast becoming plenty in our rivers and lakes, and if the work of the commissioners continues to receive the well earned support of the people, and every one helps to enforce the laws providing for the free passage of fish over all our dams and preventing excessive fishing at the time of spawning, we shall have no cause of complaint about the want of good fishes and good fishing. For it is now well demonstrated that fishes can be made

a regular and as sound a source of income as stock raising and farming, and fish farming, as it has been called, now takes its place among the regular resources of our country and state.

MR. JAMES H. EMERTON exhibited several specimens of native plants collected during the forenoon and made some remarks in relation to the same.

Dr. HENRY WHEATLAND alluded briefly to some historical associations connected with this parish of Beverly, which was organized in 1714, and was for some years known as the "*Precinct of Salem and Beverly*." The first minister,

REV. JOHN CHIPMAN,

son of Deacon Samuel Chipman of Barnstable, born Feb. 16, 1690-1, a graduate of Harvard College in the class of 1711, ordained over this parish, Dec. 28, 1715, and after a pastorate of nearly sixty years, the longest in Beverly, was gathered to his fathers, on the 23d of March, 1775, at the advanced age of eighty-five years. During this long period, nothing transpired to disturb the harmony that prevailed; he was faithful in the discharge of every duty incumbent upon his ministerial office; and was the honored and beloved pastor, who, on each returning sabbath, gave words of counsel, sympathy and wisdom to his people, who were wont to assemble within these venerable walls; uninterrupted prosperity followed, the church enlarged her borders, and the society flourished in all its interests.

A correspondent in the "Essex Gazette" says:—

"Beverly, March 29, 1775.

On Thursday last died, the Rev. John Chipman, in the 85th Year of his Age; and Yesterday was decently in-

tered. He was born at Barnstable, educated at Harvard College, and settled in the North Parish in this Town, Dec. 28, 1715, being their first Minister. It pleased the Father of Spirits to indue him with superior natural Powers, which he greatly improved, by a close Application to his studies, and making Divinity his principal Study. He was well qualified for the important Work to which he was called; and was a great Blessing in his Station. He had many Children; whom he educated and governed with great Wisdom and Prudence. His Family has been called a School of useful Knowledge and Virtue. And as he knew how to govern his own House, so he did also know how to take Care of the Church of God. The People of his Charge had happy Experience of his Ability in this Respect, while he presided over them; particularly when (some years past), this Country swarmed with itinerant Preachers and ignorant Exhorters, who threw these Churches in general into great Disorder and Confusion, propagated pernicious Errors, excited wild Enthusiasm, and promoted unchristian Divisions and Separations; by the Blessing of God on Mr. Chipman's wise Conduct, Peace and Order were preserved in his Parish, and solid, rational Religion flourished. As he was well furnished for the great Work of the Ministry, with Respect to the natural Powers of his Mind, his Knowledge and Learning, and Wisdom and Prudence, so he was also with Respect to Piety and serious Godliness. It pleased God, in his younger Years, to impress his Mind with a lively Sense of the important Things of Religion; and this he preserved through Life. By this he was excited to great Fidelity and Care in the Discharge of the Duties of his important Office. He watched for Souls, as knowing he must give Account, praying with and for his People with Fervency and Affection, and many Tears. It may perhaps be said, his Speech was contemptible, but this was said even of St. Paul, and yet he was not a whit behind the very chief of the Apostles, either for Abilities or Usefulness. His Preaching, in Imitation of that great Apostle's, was not with enticing Words of Man's Wisdom. He did not seek the Applause of Men, but the eternal

Welfare of immortal Souls: And he chose that Method of preaching which he thought would be most likely to answer this important End; and he was not deceived herein, for his preaching was attended with much Success. His People were highly favored of the Lord, in being directed to so able, faithful and successful a Minister, and in having him continued with them for such an unusual Length of Time; and it is hoped they remember it with Gratitude. He performed the Duties of his Office, with very little Intermission, almost 56 Years, when, being about 80 Years of Age, by the usual Infirmities of such an Age, and a distressing Asthma, he was taken off from his public Labours, and another Minister, the Rev. Mr. Hitchcock, settled as a Colleague with him; whom God preserve, and make a like Blessing to them. The four or five last Years of his Life he was almost entirely confined to his House, still honouring the Religion he professed and preached, by his Patience and cheerful Resignation to the Will of God under all his Sufferings. And when the Days that were assigned him here were finished, God gave him a very easy Passage into a better World. His Departure, it is said, seemed more like falling asleep than dying. May his numerous Offspring, and all that knew him, especially Ministers of the Gospel, follow the excellent Example he has left us. For blessed is that Servant whom his Lord, when he cometh, shall find so doing."

The house occupied by him on the road to the principal settlement in Beverly is still standing and is the residence of some of his descendants.

REV. ENOS HITCHCOCK.

The second minister was ordained as colleague in 1771 and the two pastors lived together in great mutual affection and harmony, the younger exerting himself for the interests of the people, spiritual and temporal, enjoying their esteem and acquiring the friendship of neighboring societies and ministers. Mr. Hitchcock was a native of Springfield, Mass., and a graduate of Harvard College in

1767. He warmly espoused the cause of his country, imbibing deeply the principles of the American Revolution, and, in 1777, entered the army as chaplain and continued until the close of the war. On the 1st of Oct., 1783, he was installed over the Benevolent Congregational Society in Providence, R. I., his connection with the church in Beverly having been amicably dissolved in 1780. Soon after he was elected into the Fellowship of Rhode Island College and for many years was one of its most enlightened and efficient directors. He was a good preacher, a learned divine, a man of active benevolence and deeply interested in the cause of popular education. He early turned his attention to the establishment of public schools for the instruction of the children of the poor, as well as those of the wealthy, visited these school frequently and made such suggestions as tended to aid the efforts of the teachers and at the same time to awaken the energies of the pupils. He also addressed parents and others on the importance of education and published several books that were replete with useful information on this subject and highly esteemed. He died at Providence, Feb. 27, 1803, in the fifty-ninth year of his age.

REV. DANIEL OLIVER

the third minister, ordained Oct. 3, 1787; the pulpit, since the retirement of Mr. Hitchcock, having been temporarily supplied by several persons. Mr. Oliver was the son of Nathaniel and Mercy (Wendell) Oliver, and father of Gen. H. K. Oliver of Salem. He was born at Chelsea, April 4, 1753, and graduated at Dartmouth College in 1785. He dissolved his connection with this church in August, 1797, and was for several years engaged as a missionary to the Indians in the Genesee River country and in the Eastern parts of Maine. He died at Rox-

bury, Mass., Sept. 14, 1840, aged eighty-seven years. For two or three years after the dismissal of Mr. Oliver, the pulpit was again temporarily supplied by Messrs. Story, Alden, and Micah Stone, until the ordination of

REV. MOSES DOW

on the 18th of March, 1801, as the fourth minister. Mr. Dow was born in Atkinson, N. H., Feb. 4, 1771, and a graduate of Dartmouth College in the class of 1796. He retired from this pastoral office in April, 1813, with the highest testimonials of the council that granted his dismissal as "an able, faithful, discreet and devoted minister of Jesus Christ." He was afterwards installed at York, Me., Nov. 9, 1815, and resigned the position, Feb. 17, 1830. He died at Plaistow, N. H., in 1837, aged sixty-six.

Rev. E. M. Stone, for many years a pastor of this church, the author of the history of Beverly and now the devoted and able minister at large in Providence, and others were mentioned.

Allusion was also made to Hugh Hill, the distinguished commander of one of the privateers from Beverly during the revolutionary war, whose country seat is within the limits of this parish, and where he resided from 1803 till his decease, which occurred Feb. 24, 1829. [See Hist. Coll. of Essex Institute, Vol. IV, page 181.]

Mr. HENRY WILSON of Beverly, mentioned some interesting facts respecting the church in which the meeting was held, the frame of which was the identical one erected one hundred and fifty-five years ago, although the exterior and interior have both been considerably modified, in adaptation to the present wants of the community. In

1837 the parish adopted resolutions to remodel the house, this was accomplished in about five months, and on the first day of February, 1838, it was reopened with appropriate services.

Remarks were also made by Messrs. Timothy Ropes, E. N. Walton, E. W. Harrington, C. Cooke, and others; and after passing a vote of thanks to the proprietors of the Church and of Mystic Hall, and to all others who had extended courtesies to the party, the meeting adjourned to Friday afternoon, at the Institute rooms.



ADJOURNED MEETING, FRIDAY, JUNE 20, 1871.

In Plummer Hall, at 4 P. M.

Daniel H. Johnson and Edwin C. Bolles both of Salem were elected resident members.



NOTICE.

ESSEX INSTITUTE HISTORICAL COLLECTIONS,

VOLUME XI. PART 1.

CONTENTS.

ADDRESS AT THE SEMI-CENTENNIAL ANNIVERSARY, by Abner C. Goodell, Jr.; SOME NOTES ON OLD MODES OF TRAVEL, by R. S. Rantoul; GLEANINGS FROM THE FILES OF THE COURT OF GENERAL SESSIONS OF THE PEACE. No. 1, communicated by James Kimball.

HAS BEEN PRINTED AND IS FOR SALE BY

Assistant Librarian at PLUMMER HALL; the NATURALIST AGENCY;

A. K. LORING'S BOOKSTORE, corner of Washington and Bromfield Streets, Boston; and the Bookstores in Salem.

DEFICIENCIES IN THE LIBRARY.

It is intended from time to time, to publish lists of deficiencies in the Library, hoping that the friends of the Institute, who may notice the same, will be induced to aid in completing the sets. Any number or volume, not designated (within brackets) under any title, will be acceptable.

DEFICIENCIES IN DIRECTORIES.

(Continued from Vol. III, page 13.)

- CAMDEN, N. J., by W. H. Boyd [1860].
 ELIZABETH, N. J., by A. Boyd [1868-9].
 ESSEX, HUDSON AND UNION COUNTIES, N. J., by W. H. Boyd [1859].
 HOBOKEN, N. J., by Gavit [1854-5]; by Gopsill [1861-2].
 HUDSON, N. J., by D. E. Gavit [1854-5]; by James Gopsill [1861-2].
 JERSEY CITY, N. J., by D. E. Gavit [1854-5]; by James Gopsill [1858-9]; by James Gopsill. [1861-2].
 PLAINFIELD, N. J., by A. Boyd [1868-9].
 RAILWAY, N. J., by A. Boyd [1868-9].
 NEWARK, N. J., by B. T. Pierson, [1835-6, 1836-7, 1837-8, 1838-9, 1839-40, 1840-1, 1841-2, 1842-3, 1843-4, 1844-5, 1845-6, 1846-7, 1847-8, 1848-9, [1849-50, 1850-1, 1851-2, 1052-3, 1853-4, 1854-5, 1855-6, 1856-7, 1857-8, 1858-9, 1859-60, 1860-1, 1861-2, 1862-3]; by C. H. Folwell [1863-4, 1864-5]; by James Gopsill [1865-6, 1867, 1838]; by A. S. Holbrook [1867-8, 1868-9]; Business Directory, by W. H. Boyd [1857-8, 1858-9].
 PATERSON, N. J., by W. H. Boyd [1857, 1859].
 TRENTON, N. J., by Clark, Moore & Raum [1854-5]; by W. H. Boyd [1857; 1859].
 ALLENTOWN, PENN., by W. H. Boyd [1860].
 ALLEGHANY, PENN., by Geo. H. Thurston [1868-9].
 EASTON, PENN., by W. H. Boyd [1860].
 ERIE, PENN., by J. H. Lant [1865-6].
 HARRISBURG, PENN., by W. Divine [1867-8]; by W. H. Boyd [1860].
 LANCASTER COUNTY, PENN., by W. H. Boyd [1859-60].
 LEBANON, PENN., by W. H. Boyd [1860].
 MEADVILLE, PENN., [1869-70].
 PHILADELPHIA, PENN., by James Robinson [1807]; by B. & T. Kite [1814]; by J. A. Paxton, [1819]; by Edward Whitely [1820]; by McCarty & Davis [1821]; by Robert Desilver [1824, 1828, 1835-6]; by A. McElroy [1837, 1839, 1840, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1854, 1855, 1853, 1857, 1858, 1359]; by S. E. Cohen [1860]; by McElroy [1860, 1861, 1862, 1864, 1865, 1866, 1867]; City and Business Directory, by James Gopsill [1858-9]; Business Directory by W. H. Boyd [1858].
 PITTSBURG, PENN., by G. H. Thurston [1868-9].
 POTTSVILLE, PENN., by W. H. Boyd [1860].
 READING, PENN., by W. H. Boyd [1860].
 WEST CHESTER, PENN., [1857-8].
 DELAWARE STATE, by W. H. and A. Boyd [1859-60].
 BALTIMORE, MD., by R. J. Matchett [1824, 1833, 1837-38]; by John Murphy, [1845]; by R. J. Matchett [1847-8, 1853-4]; by John W. Woods [1856-7] by W. H. Boyd [1858]; by John W. Woods [1861, 1865-6]; by Houston [1867].

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., AUGUST, 1871. No. 8.
One Dollar a Year in Advance. 10 Cents a Single Copy.

FIELD MEETING AT EAST GLOUCESTER, THURSDAY,
JUNE 29th, 1871.

THE RAMBLE.

COMING from its first Field Meeting at Wenham Lake and its shores, to the ocean about Cape Ann, from the placid waters of an inland lake, surrounded by woods and fertile fields, to look upon the restless Atlantic, sending its waves against a rocky coast, the disciples of the Institute were subjected to a contrast whose influence even if unrecognized must have been beneficially felt. The morning threatening rain had suggested disappointment, so the reappearance of a clear sky added its exhilaration to the rambles.

Of the two hundred and more who came from Salem and vicinity to participate in the day's search for instruction, all seemed more than usually interested in the natural features of the region visited.

From the rendezvous at the Baptist church the party proceeded in different directions on their explorations. Some accepting the courteous invitation of Thomas Niles, Esq., went to the inner side of the Point, visiting what

is known as Eastern Point Farm, the adjacent beach, and the light house, the beauty of the locality abundantly rewarding the pedestrian effort. Others passed over the ridge of the promontory to the seaward side, where rugged rocks echoing the beat of the waves, and surrounded by the foaming surf, contrasted sharply with the quiet wash of the waters upon the beach at the inner shore.

At this spot, known as "Bass Rocks," was much material to weave into entertaining fancies. The sheltered ledges formed here a cave worthy of, and naturally fitted with, some thrilling legend. The waves which broke at its entrance sounded as from some distant sea, hinting that concerning this cavern they had a tale to tell of events far remote in the past; there a marvellous passageway through solid granite, with irregular steps of trap rock from the water's edge to the summit of a granite boulder, suggested ascending and descending Indian braves, or smugglers bending beneath the weight of mysterious bundles, or more picturesque pirates with wild faces, untrimmed beards, and a small arsenal of horrifying weapons worn at their belts, each using at times this flight of natural steps as their ladder to fortune. If such events were realities instead of fancies, the name "trap" rock might have a moral as well as a mineralogical significance. At another point was a natural stone basin, whose picturesque interior, massive setting, grand surroundings, clear water, large number and variety of living occupants, constituted a royal aquarium—one of Neptune's adornments of the approaches to his territory. In most aquaria one thinks of the peril of the animals from the owner's lack of skill, or his negligence to keep the waters clear, or to observe the conditions of marine life. You fear lest the beautiful form of life you see to-

day, may mysteriously take on the repulsive appearance of death to-morrow. But here where twice each day the whole Atlantic lifts her waters, enfolds this nursling sea, washes its sides with sparkling water, and resupplies its wants with nourishing streams from her own bosom, one always expects to find vigorous life, refreshing to look upon. Nor is the expectation disappointed. Bright colored shells pave the floor of the basin with a rich mosaic. Sea anemones cover the roughness of the rocks with their base, unfold their soft tints, and wave their tufted crown of tentacles gracefully to and fro. Branching sea-sponges spring from the interstices of the rocks. The rays of the star-fish peep through the sea-plants, beneath whose growth lie many marine animals in partial concealment. Through the meshes of the weeds one can see the hermit-crabs dragging their second-hand houses across the miniature highways of this marine township, reminding one of the frequent migrations of the ancient buildings of Salem when they fall into the hands of speculators. Now and then a crab bustles actively across an open space, then disappears beneath a thick growth of *confervæ*, which he agitates by his continued movements, and makes you think that the concealed regions of this watery district must be even more densely populated than that which lies open to the sun.

The party spent much time in studying this beautiful assemblage of representatives of ocean's inhabitants which here in so rare a manner presented themselves for examination.

Some of the residents of East Gloucester whose means enabled them to give visible form to the ideas of beauty which such natural features must suggest, invited some of our party to visit their residences along the shore, where the combination of tastefully kept grounds about a coun-

try house both in keeping with the surrounding country, together with a magnificent sea-view, gave the visitors great pleasure.

The time for the ramble seemed too brief. The different sections of the party came tardily together for the collation, appointed at the church vestry at one o'clock. But the zest for active labor begotten by the morning's enjoyments enabled all to perform the duty of the hour.

The meeting was called to order at 2.30 P. M., the President in the chair.

Records of preceding meeting read.

The Secretary announced the following correspondence :—

From Frankfurt, a. M., Senckenbergische Naturforschende Gesellschaft, Dec., 31, 1870; New Brunswick Natural History Society, June 15; New York Lyceum of Natural History, June 26; Smithsonian Institution, June 22; Wien, K. K. Zool. Botan. Gesellschaft, Feb.; James S. Bryant, Hartford, Conn., June 15; W. H. Yeomans, Columbia, Conn., June 14.

THE LIBRARIAN reported the following additions :—

By Donations.

BRYANT, W. S., of Hartford, Conn. Hartford Directory, 1828. 1 vol. 16mo.

CLOGSTON, WM., of Springfield. Directories—Kingston and Rondout, 1869-70, 1 vol. 8vo. Utica, 1865, 1 vol. 8vo. Schenectady, 1865, 1 vol. 8vo. Rome, 1870, 1 vol. 8vo. Oswego, 1866-7, 1 vol. 8vo. Boonville, 1868, 1 vol. 12mo. Malone and Franklin County, 1868-9, 1 vol. 12mo. Lowville, 1867-8, 1 vol. 12mo. Carthage, 1867-8, 1 vol. 12mo. Rome and Oneida County, 1859-60, 1 vol. 12mo. Watertown, 1867-8, 1 vol. 12mo.

FOLGER, W. C., of Nantucket. Reports of the towns of Cohasset, Scituate and Marshfield for 1870-71. 8vo pamphlets.

GREEN, S. A., of Boston. Revised Gospel of St. Mark. 1 vol. 12mo. Miscellaneous pamphlets, 24.

TUCKER., W. P. Diocese of California. 8vo pamphlets. 1871.

By Exchange.

BOTANISK TIDSSKRIFT KJÖBENHAVN. Tidsskrift, Fjaerde Bind, Andet and Forste Hæfte. 2 pamphlets, 8vo. 1871.

KONGELIGE DANSKE VIDENSKABERNES SELSKABS. Oversigt, 1870. No. II. 8vo pamph. Kjöbenhavn.

K. K. ZOOLOGISCH — BOTANISCHE GESELLSCHAFT IN WEIN. Verhandlungen, Band XX. Heft 1-4 1870. 8vo pamphlets.

MASSACHUSETTS HISTORICAL SOCIETY. Collections. Vol. I. Fifth Series, 1 vol. 8vo. Boston. 1871.

MERCANTILE LIBRARY ASSOCIATION, Boston. Fifty-first Annual Report. 8vo pamph. 1871.

NATURHISTORISCHE GESELLSCHAFT IN HANNOVER. Bwanzigfter, 4to pamph. 1869-70.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Register and Journal, July, 1871.

PEABODY INSTITUTE, Baltimore, Md. Fourth Annual Report of the Provost to the Trustees, June 1, 1871.

ROYAL SOCIETY OF TASMANIA. Monthly Notices of Papers and Proceedings for 1868-9.

SENCKENBERGESCHE NATURFORSCHENDE GESELLSCHAFT. Abhandlungen, Siebenter. Bd. 1869-70. 4to pamph. Bericht, June, 1869. June, 1870.

VEREIN ZUR VERBREITUNG NATURWISSENSCHAFTLICHER KENNTNISSE IN WIEN. Schriften, Vols. IX, X. 1868-70.

YEOMANS W. H., of Columbia, Conn. Report of the Connecticut Board of Agriculture for 1869. 1 vol. 8vo. Miscellaneous pamphlets, 37.

PUBLISHERS. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

THE PRESIDENT referred briefly to the connection between Gloucester and Salem in their early history, and said that this town was of historical interest to many present, in the fact that the early settlers at Salem came first to Gloucester, and resided about two years before taking up the more permanent abode with which they became subsequently identified. He called upon Mr. George D. Phippen of Salem to speak upon

THE FLOWERS COLLECTED.

MR. PHIPPEN commenced by saying that he was reminded of a former officer of the Institute, who, when called upon to speak on an occasion similar to this, commenced his remarks with the familiar quotation, "What went ye out into the wilderness for to see?" While we may not designate this region by such an appellation, it is always our desire on occasions like this to visit the wildest locations of the neighborhood, in order that our collections may be the more rich and rare; even a "reed

shaken by the wind" becomes an agreeable sight to one coming from the dusty streets of the city.

The flowers upon the table, not collected by my own hand, suggest the shady coppice, as well as the rocky promontory, and the sandy shore. Among which are the arethusa, the dwarf laurel, the iris, the cranberry, the anagallis, the calestegia or wild morning glory, and many others which under specific names were assigned to their proper group in the natural arrangement, the only classification at this late day worthy of consideration. The most peculiar specimens presented were the full blown heads of the yellow thistle, *Cirsium horridulum*, new to most of the party, but not uncommon in many sandy localities near the sea. Notwithstanding its forbidding prickles, which gave rise to its specific name, several ladies present, impressed with its novel beauty, plucked large bunches of its showy blossoms with which to embellish their vases at home, hitherto filled with the more delicate products of the green house and flower border.

It is presumed to be generally understood that all the beautiful plants of our gardens and conservatories were once wild,—the cultivated offspring of ruder and more simple types; our own country meanwhile furnishing to other nations many an exotic of rare worth and beauty, and quite as highly prized as any of theirs are to us.

This splendid array of ornamental plants now so accessible, and with which many of our gardens are richly stocked, is the result of many long years of cultivation, with changes and mutations induced or retained by the hand of man, and generally at the expense of what may be called the integrity of the plant, that is, more or less to the sacrifice of its vital and generative forces. Many plants with such an origin, though extremely ornamental

or useful to us, are most carefully propagated by cuttings, and are in fact but the assiduous multiplication or rather prolongation of the same individual life, which is not the case with plants of a more primitive type, that consequently are freely propagated by their own prolific seed.

This we understand to be one phase of the high mission of man while a denizen upon the earth, to exercise the noble privilege of subduing all things unto the best wishes and purposes of his race, having this promise ever before us taught by science as well by our sublime religion, that by seeking we shall find, by knocking it shall be opened unto us ; a sure reward sooner or later always repaying the patient investigator.

It therefore becomes not irreverent to declare that in a certain sense and in a delegated manner man is a creator, calling into being forms that without his aid might never exist.

The grains and edible roots so indispensable to man and the lower animals are so few as to be "almost counted upon the fingers" but in their varieties are almost endless ; while many of them in a primitive wild state can no longer be found upon the earth. Much the same is it with the fruits proper, and while this has been so long true, there still remains unknown and unappropriated hundreds of plants capable of yielding both food and ornamentation, that still remain in the wilds of the earth just as they came from the great Creator's hand, simple and undeveloped.

When we allude to the plants of the garden and greenhouse, how few of the large number do we find well understood in their possible modifications and whose manifest changes scarcely ever weary us. If this developed few in their numerous varieties were taken from their places on the shelves and in the borders, our gardens would be bare indeed.

The botanist and the florist, though sometimes combined in the same individual, possess severally elements of knowledge and taste of great divergency, the former always looking with jealousy upon the labors of the latter; knowing well that the doubling of flowers and the variegation of the foliage of plants are accidents or innovations more or less destructive to plant vitality and the purity of the species.

The tendency of reversion to primitive types is so well understood that no florist can keep a fine selection of rarities without the most careful destruction of *rogues* among his plants, and the most diligent *strain* of his seeds. Upon a cessation of this care these varieties fall back year by year with considerable rapidity to their primitive species or type.

In our day, varieties seem to be almost manufactured to order, be the caprice of the market what it may. Who has not been surprised as well as delighted by the rapid increase of plants of different genera and species, adorned with particolored foliage, some of which, like the zonale geraniums, taking on hues like the rainbow, and vieing even the plumage of birds. The rapidity and seeming spontaneity of these changes must to the ordinary observer be puzzling indeed.

Though we have claimed these as the product of the hand of man, it is more nearly like retaining the angel till he blesses us, rather than calling him from the skies.

It is not uncommon to find similar accidental forms even among wild plants in their native abodes, as we can bear witness, having found double mountain laurel, striped cardinal flower, yellow columbine, quilled white-weed, linear petaled œnothera, double saxifrage and many others not readily called to memory.

Albinos and stripes among the green spray of the natu-

ral foliage often occur, which might be retained and made permanent by bud grafting. From such accidents as these it is, that the florist moulds his novelties, being careful to intensify the derivation by grafting, by slipping, or by seeding the plant and watching its offspring.

Much might be said of the numerous hybrids that may be produced by a judicious crossing of near affinities, and pressing each novel tendency till it becomes intensified and fixed by breeding, requiring perhaps several generations.

Deviations are much more likely to occur among plants under cultivation than those in a natural state.

The readiest change for a plant to make is in the color of its blossom, otherwise plants vary chiefly in the direction of their prominent peculiarity, or that of prospective usefulness; selection, both natural and applied, tending to the same end. With the edible roots, we may expect improvement in that direction, with fruits, in their enlargement and the luscious quality of their flesh, with flowers, in the multiplication of their petals, or in changes of their hues. Neither the fairest apple nor the richest pear has yet been attained; and the most fragrant rose and most gorgeous lily are still in reserve for the gratification of the taste of man.

When we remember the almost endless changes that a few years since were produced from the simple scarlet eight-petaled dahlia of Mexico, or with the kingly robes of the lily and tulip, with multiplications of the rose, the peony, the fuchsia, the petunia, the verbena, etc., we are apt to feel in their abundance, that the climax has been achieved; but to all whose taste seeks continued gratification we may say with confidence, and that without treading upon ground appropriated by Darwin or hastening to his conclusions, that there is absolutely no end to the de-

velopment and mutability of all that is excellent for food or gratifying to our taste of the beautiful, among the vast array of the species that compose the Vegetable Kingdom.

Mr. JAMES H. EMERTON of Salem spoke of the insects collected in the morning's ramble, among them some specimens of the lace winged fly (*Chrysopa*) and its eggs, which had been found attached to grass leaves from a field near the shore, each egg raised upon a hair-like stem. The young larvæ of this fly and the structure of their mouths, by which they are enabled to suck the juices of insects without eating the solid parts, were described, with illustrations on the black-board.

He then passed around among the audience some sixty spiders and several cocoons of spider's eggs, which had been collected in the morning, and made some remarks on them, and the growth of spiders in the egg.

Rev. J. H. GANNETT of East Gloucester alluded to the appearance of this village as he saw it from the deck of a vessel in the harbor some twenty-four years since, and gave a very interesting sketch of its growth, and of the church in which this meeting was held.

HISTORY OF THE BAPTIST CHURCH IN EAST GLOUCESTER.

The first Baptist meeting of which there is any recollection in East Gloucester, was held about thirty years ago, the Rev. William Lamson, pastor of the Baptist church in the town of Gloucester, and now pastor of the Baptist church in the town of Brookline, Mass., preaching to a very few persons in a small building used for a school house.

From this date it appears that they continued to hold

meetings from time to time, convening with the various families and members who worshipped on the Sabbath with Bro. Lamson's church.

East Gloucester at this time was very sparsely settled, but as business increased, dwelling houses were rapidly erected, stores were opened, school houses were built. The friends of Zion feeling called upon to make an organized effort for the moral and spiritual good of their growing village, a union sewing circle was formed; but it being ascertained that the prevailing sentiment was Baptist, it was decided to erect a chapel.

In the year 1858 a small building was erected 50 feet by 36. It was dedicated the fall of the same year, the sermon being preached by William Lamson, D. D., text, Joshua, v: 15.

Previously (in 1855) there had been a small Sabbath school organized in the village and held in the hall of the engine house, and also one on what is known as Rocky Neck. This school met in the house of Bro. David Smith, and was under the charge of Sister Susan E. Wonson.

As soon as the chapel was dedicated and opened for meeting, these schools were transferred to this place and given in charge to Bro. Geo. Parsons, who is still the superintendent.

At first the people were supplied with preaching by different persons occupying the desk. In 1858 Father Lisle was invited to become their preacher (we cannot say pastor, for this enterprise was nothing more than a branch interest—a mission of the first Baptist church.)

In 1861 Bro. Cheever of Manchester was invited to assist Bro. Lisle in a series of meetings. A powerful reformation followed, but there being no church organization most of the converts joined other churches.

Father Lisle left, and in the spring of 1863 the society

invited the Rev. Andrew Dunn to supply the desk. In July of the same year (63) a council was convened to consider the propriety of organizing a church (an independent society). After a satisfactory examination a church was constituted, composed of fifty-six members. Two deacons were chosen, viz.: Brethren Geo. Parsons and Herbert Stanley who still serve the church. Bro. Dunn stayed with them as their pastor for four years, then resigned.

The infant church in the spring of 1867 sent to the Theological Institute at Newton, for a candidate, whereupon a young man by the name of J. H. Gannett was sent them, to whom the church and society extended a call to the pastorate. He accepted, and entered the work August 1st, 1867, receiving ordination the 22d of the same month, Rev. G. Cole of Weymouth preaching the sermon.

The church for years had been in a low condition, and was still, the Sabbath school few in numbers, sadly in want of efficient teachers, and entirely destitute of library books. During the following winter (1867-68) one hundred dollars expended in books supplied the school with a good library. This seemed to be the only movement manifested for the better—the meeting continuing dull, the preaching powerless. Our village had increased in population and now numbered about 1500, and it seemed expedient to have a larger place for worship.

The building was raised ten feet, lengthened about twenty-five, a vestry was finished under the entire length, and a spire of seventy-five feet added. Eighty pews were placed in the auditorium, the settees being moved into the vestry below. The entire expense was about \$5,000. About \$3,000 of it was raised, leaving the society in debt \$2,000; the following year \$1,000 of this

was paid and the remaining \$1,000 now stands as a debt against the society. On the 3d of Feb., 1869, the house was dedicated to the service of Almighty God, William Lamson D. D., of Brookline, preaching the sermon. Text "The tree is known by his fruit."

The pews were rented to pay the necessary running expenses (all monies being formerly raised by subscriptions) and instead of \$500 or \$600, as in previous years, the rentals amounted to \$1,600. The congregation was very much increased, and the whole enterprise received a stimulus.

In January, 1870, a series of meetings were commenced, Bro. Needham, the Irish Evangelist, preaching a few times—which resulted in a powerful awakening. The large vestry was filled to overflowing, night after night—souls were constantly inquiring "what shall I do to be saved?"—others were rejoicing in a newly found Redeemer.

This interest lasted till late in the spring, when the pastor had the joyful privilege of leading into the baptismal waters seventy-four happy converts—ten others were received by letter and experience.

The present number is one hundred and forty-eight. The church has two deacons. Only two pastors have ministered at her altar, Bro. Dunn and the present incumbent.

The ladies of this society have assisted very largely in the support of this enterprise. They have furnished the house throughout, besides placing a good organ in the orchestra.

Our village now numbers 2,100, and we need a still larger house for worship. May the Lord furnish one in his own good time. The church will be nine years old July 13th, 1872.

Mr. Gannett also spoke of the geology of the Cape, and expressed the hope that if there were any present interested in that direction they would open these hard leaflets and read the tables written there by the hand of God. We have on Massachusetts' southern shore a long, sandy beach called Cape Cod, and here on the other side of the bay is a rocky cape. The southern shore is changed by the waves, but these rocks for years have remained the same.

The PRESIDENT stated that the geology of this county was a problem not yet satisfactorily solved. The attention of Prof. T. Sterry Hunt of the Canadian survey and other geologists has been directed to this subject, and these gentlemen will give it a careful consideration. Prof. A. Hyatt, a member of the Institute, is collecting materials for a report on this subject. At a meeting of the Institute, a few weeks since, he exhibited a beautifully executed map of Marblehead Neck, and gave the results of his observations in that locality and its immediate vicinity. It is intended to continue these observations each successive season, until the whole county has been examined; thus we may expect, ere the lapse of many years, to have the materials for the long desired report on the geology of the county ready for the press, with correct maps illustrating the same.

THE STUDY OF THE LOWER FORMS OF LIFE.

Concerning the plate containing sixty varieties of spiders, captured and commented upon by Mr. James H. Emerton, Dr. A. H. JOHNSON remarked, that as it had passed from hand to hand through the audience for inspection, possibly the thought had arisen, that to catch and study these little animals is frivolous business—amusing,

perhaps—but hardly profitable. To meet this idea the speaker said that many are unaware that it is through laborious study of the organism and development of the lower animals, that data are obtained to interpret the more complex organization of the human system. Facts obtained by such study, as another has said, “furnish the alphabet which we must learn in order to read the more intricate compositions of nature.”

Thus, the human lungs present to the eye a very intricate structure, difficult to explain. But the simpler lungs of the frog, or the transparent lungs of the turtle, show at a glance the general plan upon which the respiratory organs of the higher animals are formed, viz. :—that of a sack or pouch, divided by partitions into numerous chambers or cells, upon whose walls the minute blood vessels form a mesh work, while these cells, by means of a system of tubes, are open to the external air, which they can alternately receive and discharge.

So concerning the circulation of the blood through the capillaries, the transparent web of the frog’s foot under the microscope has furnished demonstrations and taught lessons which one might seek in vain in the human system.

One of the lowest forms of animal life is the microscopic *amœba*, an animal which appears like a mere structureless drop of jelly. Yet it has been seen to assume a great variety of forms by alternate expansions and contractions, to fold itself around and to take into its cavity other animalcules or portions of plants, parts of which it consumed, and other parts rejected as indigestible. Curiously enough, the white corpuscles of the human blood have been seen to imitate the *amœba* so closely that they have been named *amœboid cells*. They were first studied by being removed from the circulation, and placed

under the microscope in an artificial serum, while the ordinary animal temperature was preserved as well as possible. But the mesentery of the frog has been found to furnish the best opportunity to watch their movements, and revealed very novel and startling facts concerning their behavior. Here they have been seen to take granular pigment, purposely injected into the veins, into the interior of their bodies, and after bearing it to a greater or less distance through the circulation, to again eject it. Or they have been seen to pass through minute apertures in the capillaries bearing the pigment with them into the surrounding tissues. Owing to these free movements they have been called wandering cells. They suggest an explanation of the agency by means of which diseased action in one portion of the system is sometimes transferred to remote portions of the human frame. It would be impossible to ascertain these facts from an examination of the opaque tissues of the body. Yet they are of immense practical importance. Hence it is a philanthropic work to study the tissues of the smaller animals by means of which such information is obtained.

It has been recently suggested that the Society for the Prevention of Cruelty to Animals should make exertions to put an end to physiological experiments upon the lower animals. Such action will be deprecated by all who would act for the prevention of cruelty to men. For such experiments are still necessary to furnish the knowledge requisite to proper action for the relief of human suffering.

BULLETIN

OF THE

ESSEX INSTITUTE.

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FIELD MEETING AT EAST GLOUCESTER, THURSDAY,
JUNE 29th, 1871.

[Continued.]

Rev. Mr. BOLLES of Salem said he supposed all had heard of ministers who went to church, leaving their sermons at home, and had to send for them, sometimes getting the last Sunday's sermon from the messenger. In the same way he had lost his text, and a boy of sixty years who volunteered to go for it had not returned. In other words he had left his box of specimens upon a rock near the ice houses.

Mr. Bolles spoke of two specimens of considerable importance. He had found near the water side two specimens of a land shell, one of the largest in Massachusetts, about the size of a walnut, of a yellow color, banded by about six or eight bands of dark brown. Their interest does not lie in their color or size, but depends upon the fact that this is an English shell, supposed by some to

have been transported upon this coast from the gardens of England. It is called the

HELIX HORTENSIS OR GARDEN SNAIL.

In England, the species is a very brilliant shell, the varieties of banded ones (bright yellow on brown, or brown on yellow), being much more numerous than plain brown or yellow shells. But in the eastern part of this country the land mollusks have shells which are mostly uniform in color and somewhat dull—brown being the prevailing hue. And these specimens of the garden snail which we find here are mostly of a uniform yellow—the banded ones being scarce and when found not very bright in color.

The question is, how did these shells come upon the American coast? We might say that they came over from Europe in the *Mayflower* or subsequent vessels. As so many trace their ancestry, we might say that three brothers of them came over a great many years since and settled here, and all these snails were derived from that stock. But this theory is upset by the fact that these shells are found upon islands far out to sea, uninhabited and seldom visited. We cannot suppose the hand of man placed them there. Upon the coast of Maine, eight miles out from land, nearly off Harpswell, is an island,—we call it an island by courtesy, although it is very small, the sea side but a mass of rocks, and the inside a gentle slope with a few stunted cedar trees and a profusion of the plants of the wild morning glory. Turn over almost any shelving stone and you will find the nest of the stormy petrel. There we find immense quantities of these shells, which you may gather by the quart. The island is almost unapproachable. The day I landed I had to employ a boatman to keep the boat off the rocks by rowing while I explored the island. On that little strip no man planted

these shells, and yet you will scarcely find a spot in Maine yielding a richer harvest to the conchologist.

Helix albolabris, *Helix alternata* with its curious albino variety, two of the three species of *Succinea* in Maine, many species of the minuter *Helices* with *Zua* and various *Pupidae* literally cover, in places, the ground and the rank stems of the weeds which luxuriate in the guano-enriched soil. Could the *Helix hortensis* have been imported from the gardens of England to mingle with these native shells?

LIMNÆA COLUMELLA.

The second point of interest we found was a deposit of fresh water shells at the pond on the top of the hill. Bodies of fresh water in this country exhibit a large number of shells, several of the genus called *Limnæa*. The kind frequenting this pond is the *Limnæa columella*, a shell which does not exceed one-half inch in length, and is often much smaller. While exploring the shores of the pond we saw what seemed to be a deposit of seeds, but on stopping to examine it we found it to be a complete mass of very minute shells. There was not one that was one-eighth of an inch long. They seemed like little yellow grains of glass. I never saw such immense quantities of them as you may find along the margin of that pond. You might gather millions of them. Every stick and rock was covered with them. There they lie, millions of them, dried up upon the margin of that water. We could not get a single specimen that was grown up. They reach their highest state of development early in the spring, and after leaving their eggs, the business of their life being concluded, they die. We found a number of dead adult shells there. Thus this mollusk follows the law of progress. Having fulfilled its function it leaves the rising generation to carry on the work. I never

tire of looking upon the pictures and legends we have written upon the created things of this world. One brother spoke of the lessons written upon the rocks. Every other thing in nature is a similar page written in divine love. Upon every fibre of animal life, every grain and seed, every leaf, and everything we can see and understand, the same mystery of life is written. There is an invisible, infinite world, whose wonders our eyes may sometime be sharp enough to observe.

Rev. RICHARD EDDY of Gloucester being called upon, said that he had a very great affection for the old time people of Salem for the good care which they took of and the sympathy they extended to the founder of his native state, Rhode Island. While the gentleman was speaking of the fact that in some sense it is given us to be creators, I wondered if you had been favored with the sight of some of the albums and scrap books which the ladies of this place have made so beautifully from sea flowers which they gather here.

After brief remarks from Messrs. WILLIAM B. TRASK, of Boston, E. N. WALTON, of Salem and JAMES DAVIS of Gloucester, the following resolution was unanimously adopted.

Resolved, That the thanks of the ESSEX INSTITUTE be extended to the proprietors of this church, to Rev. J. H. Gannett, Messrs. Thomas Niles, Herbert Stanley, J. Warren Wonson, Leander McFarland, George Parsons, Mrs. Mary Wonson, Mrs. Julia Daniels, Mrs. Gannett and all others who have contributed to render this meeting at East Gloucester so agreeable and profitable.

Adjourned :—

MEETING NEAR "SHIP ROCK" IN PEABODY,
WEDNESDAY, AUGUST 2, 1871.

THE RAMBLE.

CONTIGUOUS to the northwestern boundary of Salem is a considerable territory lying within the townships of Lynn, Peabody, and Lynnfield, sparsely inhabited, diversified in surface, and largely covered with a good growth of forest trees, varieties of the pine and of the oak predominating, though specimens of the maples, ashes, walnuts, elms, birches, etc., are found. Numerous boulders, varying in size and position, are scattered around, giving evidence of having been brought during the glacial period. A careful examination of them, together with the other rocks in situ, is worthy the consideration of the geologists.

The southeastern portion of this region, formerly known by the name of "The Rocks," recently by the more euphonious one of "Rockville," was selected for the ramble this day. A small chapel near by, in part sustained as a mission chapel by the First church in Peabody, was kindly tendered to the Institute as the place of rendezvous and for the afternoon session.

This region is a favorite resort to the student of nature and the lover of the picturesque. To them the varied surface and diversity of soil furnish specimens to investigate and views of great beauty to study and admire. A scramble up some of the hillsides among the lichen covered rocks, the gnarled trunks and the twining vines, is well repaid by an extensive prospect, comprising the surrounding country dotted with villages and isolated farm buildings, and the distant ocean whitened with the sails of numerous vessels and occasionally darkened by the cloud of smoke from a passing steamer.

Among these hills are many secluded recesses and shady nooks, the homes of some of our choicest floral gems—here the botanist and zoologist can each find specimens of interest in their respective lines of investigation.

To the older members of the Institute this locality has a peculiar interest. The late Dr. Andrew Nichols, one of the founders and the first president of the Natural History Society, and a zealous student of nature, was wont to ramble over these hills and dales, in quest of his favorite objects for study and investigation, and became very conversant with the many curious and interesting forms there found. He contributed largely to the success of the early field meetings, pointing out interesting localities during the ramble, and communicating freely the results of his observations at the afternoon session. No object was too insignificant to his finely cultivated eye, no fact too small to escape in its meaning and instruction his noble and loving heart, but with a true and humble faith he saw beneficence and wisdom in them all. He passed away on the 31st of March, 1853, as the little *Draba verna*, a plant which he detected many years previous in this vicinity, on some rocks moistened by the later snows of spring, was opening its tiny petals to another vernal season.

The party from Salem left that place in a special train at 9 A. M. Soon after arrival, being reinforced by members and friends from other towns, they divided into several groups. Some spent the forenoon in wandering about the fields and among the pine groves in the midst of which "Ship Rock" is situated, some went to the vicinity of Bartholomew's Pond and were successful in collecting many choice specimens in botany and zoology, whilst others took different directions as inclination prompted.

The land in the region of which Bartholomew's pond may be considered as the centre, comprising some two or three hundred acres more or less, and extending from Brown's Pond on the old Lynn road to the Lynnfield road, combines many attractive features for a *Public Park*. It seems desirable that measures should soon be adopted to secure this land for this purpose. Cannot the citizens of Lynn, Peabody and Salem, individually or in their corporate capacity, make a movement in this direction. Nature has already done much—a comparatively small expenditure only will be required to render it one of the most attractive places of resort by the citizens of these several municipalities.

It may be appropriate in this connection to allude to another subject of a similar import. In Salem and the vicinity, comprising a circuit of some ten or fifteen miles, are large tracts of pasture and woodlands, over which the waves of an increasing population are gradually rolling. If this movement should continue in the corresponding ratio of the past twenty-five or thirty years, only a short time will elapse ere this whole area will be occupied by residences or for strictly private purposes. Would it not be well to have portions of this land in different localities secured, as opportunity may offer, to be appropriated, when required, for public use?

At noon several little picnic parties were scattered among the trees, enjoying the contents of their baskets; while the main body gathered at the chapel and there partook of the collation spread in the shade of the building.

The afternoon session was called to order at 3 o'clock, the President, HENRY WHEATLAND, in the chair. In the absence of the Secretary, Wm. P. Upham was requested to act.

Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From Buffalo Historical Society, July 5; Chicago Academy of Sciences, May 26; Maryland Historical Society, July 14; Munich R. B. Akademie der Wissenschaften, Feb.; New England Historic-Genealogical Society, June 28; Tasmania Royal Society, Dec. 8, 1870; John Akhurst, Brooklyn, New York, July 21, 26; N. E. Atwood, Provincetown, July 17; S. C. Bancroft, Salem, Aug. 1; Edwin C. Bell, Titusville, Penn., July 31; George B. Blodgett, Rowley, June 30; James P. Boyce, Lynn, July 18; John Ward Dean, Boston, July 7; H. W. Dutton, Boston, July 5; B. Groce, Peabody, July 19; T. Sterry Hunt, Montreal, June 28; E. H. Knight, Salem, July 21; John W. Porter, Salem, July 15; R. S. Rantoul, Boston, July 10, Aug. 1; W. E. Rogers, Paris, Tenn., June 30; E. A. Smith, Boston, July 7; C. M. Tracy, Lynn, Aug. 1.

The LIBRARIAN reported the following additions :—

By Donations.

U. S. OFFICE OF THE CHIEF OF ENGINEERS. U. S. Geological Exploration Vol. III. 1870, 1 vol. 4to. Atlas, 1 vol. folio.

NEW YORK CHAMBER OF COMMERCE. Annual Report. 1870-1, 1 vol. 8vo.

BOLLES, E. C. Brooklyn City Directories, 1866-7, 1868-9, 1869-70. 3 vols. 8vo. Cincinnati Directory, 1856, 1 vol. 8vo. Syracuse City Directories, 1862, 1864-5 1866-7. 3 vols. 8vo. Miscellaneous pamphlets, 38.

BUSWELL, E., A Chain of Scripture, 1 vol. 12mo. London. 1659.

CLOGSTON, WM., of Springfield, Mass. Meadville Directory, 1869-70, 1 vol. 8vo. Steubenville Directory, 1856-7, 1 vol. 8vo. Lockport Directory, 1837-8, 1 vol. 8vo. Steubenville, Wellsville, East Liverpool and Wellsburgh Directory, 1870-1, 1 vol. 8vo.

EDDY, HARRIET. Miscellaneous pamphlets, 7.

GREEN, S. A., of Boston. Cambridge Directories, 1857, 1866, 2 vols. 8vo. Cornell's Geography, 1 vol. 12mo. Butler's Grammar, 1 vol. 12mo. Miscellaneous pamphlets, 5.

HALE, HENRY, Atlas of Massachusetts, 1 vol. Folio. 1871.

LEE, JOHN C. Commercial Bulletin for July, 1871.

MORSE, Mrs. E. S. Constitutional Telegraph for 1802, 1 vol. Folio.

PERKINS, JONATHAN C., Eclectic Magazine. 27 vols. 8vo. Edinburgh Review, 1 vol. 8vo. The New World, 2 vols. 4to. Transactions of the Essex Agricultural Society, 11 nos. London Quarterly Review, 9 nos. North American Review, 6 nos. Miscellaneous pamphlets, 260. Massachusetts Documents, 1844-5-6-7-8.

SAWYER, F. A., U. S. Senator. Congressional Globe, parts 2, 4, 6. 3 vols. 4to. 1869-70. Appendix to part 7, 1 vol., 4to. Land Office Report, 1869, 1 vol. 8vo. Report on Education, 1870, 1 vol. 8vo.

SILSBEE, Mrs. B. H. The Classical Library, 5 vols. 16mo. Domestic Verses, 1 vol. 12mo. Acton, 1 vol. 12mo. Colman's Poems, 1 vol. 12mo. The Huguenots, 2 vols. 12mo. Smith's Poems, 1 vol. 12mo. Margaret, 1 vol. 8vo. Edith, or the Light of Home, 1 vol. 8vo. Boston Almanacs, 7 vols. 16mo. Cowper's Poems, 1 vol. 12mo. Priestley's Discourse, 1 vol. 8vo. Priestley's Lectures, 2 vols. 8vo. Moore's Universal Geography, 2 vols. 8vo. Hadad, 1 vol. 12mo. Blair's Sermons, 5 vols. 8vo. Akenside's Poems, 1 vol. 8vo. Johnson's Dictionary, 1 vol. 8vo. Man on History, 1 vol. 12mo. Night Thoughts, 1 vol. 12mo. Oberon, 2 vols. 16mo. Locke's Essays, 3 vols. 12mo. Mathilde, 6 vols. 12mo. Aikin's Let-

ters, 1 vol. 12mo. Historie Romaine, 2 vols. 16mo. Book of Ferns, 1 vol. 4to. Atlas of United States, 1 vol. 4to. Miscellaneous pamphlets, 16.

STICKNEY, MATTHEW A., Railroad Reports, 16 nos.

UPHAM, J. BAXTER, of Boston, Mass. Report of the School Committee of Boston for 1870, 1 vol. 8vo.

WALTON, E. N. Report of the School Committee of Rockport for 1871. 8vo pamph. Minutes of the Salem Baptist Association, held in Beverly, June 6, 1871. 8vo pamph.

WARD, Mrs. JAMES. Evenings at Home. 1 vol. 12mo. Scott's Kian Life. 1 vol. 12mo. Miscellaneous pamphlets, 13.

WHEATLAND, E. Life of Christ. 1 vol. 4to. Combe on Constitution of Man. 1 vol. 8vo. Letters to Mothers. 1 vol. 12mo. Self Instructor. 1 vol. 12mo. Memoirs of Josephine. 1 vol. 16mo. Brackenbridge on South America. 1 vol. 8vo. Barnaby Rudge. 1 vol. 8vo. Life of John Smith. 1 vol. 16mo. Ruth Hall. 1 vol. 12mo. A Blind Man's Offering. 1 vol. 12mo. How to be a Lady. 1 vol. 16mo. Scientific American, 234 nos. National Portrait Gallery, 30 nos. Journal of the American Unitarian Association, 27 nos.

WHEATLAND, M. G. Atlantic Monthly. 7 nos. Galaxy. 12 nos. Old and New 13 nos. Miscellaneous pamphlets, 86.

YOUNG MEN'S CHRISTIAN ASSOCIATION, Worcester, Mass. Annual Report. 1871. 8vo pamph.

Exchanges.

AMERICAN ANTIQUARIAN SOCIETY, Worcester, Mass. Proceedings. No. 56. 8vo pamph. 1871.

AMERICAN CONGREGATIONAL ASSOCIATION, Boston, Mass. Annual Report. May 30, 1871. 8vo pamph.

AMERICAN ENTOMOLOGICAL SOCIETY. Transactions of. Vol. III, No. II. 8vo pamph. 1870.

BLACKMORE MUSEUM, Salisbury, England. Flint Chips by E. T. Stevens. 1 vol. 8vo.

BRONSON LIBRARY, Waterbury, Conn. Annual Report for 1870-1. 12mo pamph.

CHICAGO HISTORICAL SOCIETY. Constitution and By-Laws. 8vo pamph. 1871. Report of Trade and Commerce of Chicago. 8vo pamph. 1871.

NATURFORSCHENDER VEREIN IN RIGA. Correspondenzblatt, 18 Jahrg, 1870. Denkschrift, 27 März, 1870.

NEW YORK LYCEUM OF NATURAL HISTORY. Annals, Vol. X. Feb.-March. 8vo pamph.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. Proceedings of. Part I. Jan., Feb., March. 1871, 8vo pamph.

PUBLISHERS. American Literary Gazette. American Naturalist. Christian World. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Ipswich Advance. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer. Sailor's Magazine and Seaman's Friend. Silliman's Journal.

The PRESIDENT, in his opening remarks, said that the last meeting of the Institute in this place was held on Thursday, Aug. 15, 1864, and that our late worthy associate, Rev. Stillman Barden, of Rockport, was present,

occupied the chair, and gave an interesting geological account of "Ship Rock and its Surroundings." This was the last meeting of the Institute which our friend attended. His health, not good at that time, soon began to fail more rapidly, and after a lingering illness of several months, he died on the 7th of August, 1865, at the age of fifty-three. He was a devoted pastor, a kind friend, and an active member of the Institute. He had given considerable attention to geological pursuits, and during his residence of a few years in Rockport, was, if necessary assiduous in making collections of the minerals of that locality, and had just entered upon a series of observations and research that would have resulted in extending largely our knowledge of the geology of the region, when summoned to his final rest. A biographical and obituary sketch prepared by Rev. Mrs. P. A. Hanaford has been printed in the 7th volume of the Historical Collections.

It is meet that the Institute should occasionally visit its property, the famous boulder known as "Ship Rock," and hold a meeting in some convenient place near by. This boulder came into the possession of the Institute through the instrumentality of the late Dr. Andrew Nichols, in November, 1847, who was desirous that the society should be the owner and guardian of this interesting and valuable specimen. The late Mr. Pickering Dodge of Salem obtained by subscription among several of his friends the requisite funds to purchase the rock and adjacent land and to make some improvements, including an iron ladder to aid in ascending to the summit, from which an extensive view is obtained. This purchase was made of Caleb Osborne, who obtained the property of Amos Trask, Jr., June 27, 1831, being part of the distributive share in the real estate of his father, Joseph

Trask, of Danvers, who died in 1813. This property had undoubtedly been in the possession of the Trask family for two or three generations. It would be an interesting subject for the antiquarian to trace back the ownership to the original grantee and also ascertain the origin of the name "*Ship Rock*," and the various traditions respecting the same. Some of these are more or less fanciful. The President stated that among the recent donations to the Society was a photograph, from Mr. W. B. Trask of Boston, of the old Trask house on Boston Street, Salem, that was built by one of his ancestors about 1680.

INDIAN RELICS FROM BEVERLY.

Mr. F. W. PUTNAM exhibited a small but very interesting collection of stone relics found in Indian graves in Beverly in July last, and presented to the Peabody Academy of Science by John Lovett of Beverly, and Messrs. David Moore, John Felt, C. Cooke and himself.

These relics were of great interest, as their authenticity as coming from graves was beyond question, Mr. Putnam having taken some of them from the graves himself, and having been shown the exact spot where the others were found. The only regret is that the relics from the three graves were mixed together so that the collection has to be spoken of as coming from three graves without being able to designate the particular article from each, except that one of the graves contained two pipes, a second, one pipe, while the third did not contain any. The three pipes were of soapstone, of the same general size, character and shape, consisting of a flat base about four and one-half inches in length, narrowing at each end, and about two inches in width at the central and widest portion under the bowl. This base was perforated by the hole for the passage of smoke from the bowl to the mouth

of the smoker, the base of the pipe thus answering for a stem. The hole was about one-eighth of an inch in diameter, and was evidently bored to the bowl before the thin base of not over a quarter of an inch in average thickness was finished off, as a small ridge was left over the hole along the upper edge of the stem portion. About the bowl are several holes through the flat portion, probably used for fastening the pipe to a wooden holder or for the attachment of ornaments. The bowl is smaller at its base than at its top, and largest in the centre where the diameter is one and one-half inches. The height of the bowl is two and one-half inches, with a slight rim at its edge. This description answers to the two pipes exhibited, and the third, which did not fall into the possession of the Academy, was said to be of the same shape and size. One of the pipes has two lines cut round the upper portion of the bowl, and the bottom of the base is nearly covered with transverse, longitudinal and cross lines. In one of the graves was found a small piece of smooth sandstone about two and a half inches long by three-quarters of an inch in width and one-eighth of an inch in thickness, on which were several markings, which may have a meaning, but at present all that can be said is that they consist of two or three lines sweeping from the left upper corner to the bottom and then up to the right upper corner, with two lines drawn across the surface about a quarter of an inch apart, connected by eight cross lines, making such a picture as a child would draw to represent a ladder, and at the side of this are two lines coming together at the top, as a child would draw a tent, and two other semicircular lines are crossed by several smaller ones. The opposite surface of this stone is not finished as smoothly as the one having the markings.

The other relics consisted of one well made spear

point, one partially made arrow point, two "skin dressers" and three narrow, flat stones smoothly finished and with a hole bored through one end. The smallest of these stones is about twice as long as wide, and has a blunt but sharpened edge. The other two are about half as long again as the short one and are square edged, and are also distinguished from the small one by the presence of notches on the end where the hole is. One of them is of a fine sandstone and was evidently used for the purpose of sharpening other implements on.

There were also three flat pieces of sandstone well worn and grooved by serving as sharpening stones, and also another smooth oval stone.

Besides these stone implements and the pipes, there were several quite large pieces of mica found in the graves, and several of the implements, as well as the earth taken from the bottom of the grave, are colored quite red, evidently by red ochre being put in the graves.

The only remains of the skeletons consisted of a small portion of the skull found in one of the graves, and the enamel of one molar tooth. All else had been reduced to dust. The graves were on the top of a large gravel hill and had been scooped out, and after the body had been put in the grave had been filled in with the surface soil and not with the gravel taken out, as was distinctly seen, as these graves were reached not by digging down from the top but by coming on them from the side in digging away the hill, thus exposing them in section. A detailed description of these relics, accompanied by figures, will be given in the sixth volume of the *American Naturalist*.

Mr. JAMES H. EMERTON exhibited a large collection of plants that had been made during the forenoon rambles,

representatives from the different localities visited, and specified among others several species of water plants which were very interesting to the audience—thus the (Bladderwort) *Utricularia inflata* with its leaves bearing little bladders filled with air that float the plant at the time of flowering, hence its name. The *Limnanthemum lacunosum*, so called from the situation where it grows, the *Nuphar advena*, and the favorite water lily of our ponds, *Nymphaea odorata*. He described two species of native orchis, *Platanthera psycodes*, and *lacera* for the purpose of showing the method of fertilization by the help of insects; first in spiranthes, and afterwards in other specimens of the orchis family, particularly the ragged orchis (*Platanthera lacera*). In the orchis the stamens and pistils are united into one organ, the stamens being above the pistils. In spiranthes a modified stigma, projects between the true stigma and the stamen. As the pollen ripens, it projects from the stamen and attaches itself to the viscid surface of this modified stigma. When an insect enters the flower, this viscid stigma becomes detached and adheres to it, so that the insect carries it away and the pollen with it. On entering another flower the insect pushes the pollen against its stigma, and thus it ensures the fertilization of one flower by the pollen of another. In other orchids, the same result is obtained in different ways.

MR. WILLIAM B. TRASK, of Boston, being called upon by the President, made a few remarks in regard to the old "Trask House," 158 Boston street, Salem, which was photographed in June last, and a copy of it presented to the Institute. This house was built, it is supposed, about the year 1680, by William, eldest son of Capt. William Trask. It was occupied by him and his family,

and used in part, for many years, according to tradition, as a public house, under the cognomen of the "Black Horse Tavern." Mr. Felt, in his "Annals of Salem," informs us that in the year 1690, Wm. Trask was recommended as an innkeeper. Six generations of his descendants were born, have lived and died there. Isaac Bullock, who deceased Dec. 30, 1870, in the 71st year of his age, was the last of the descendants of Capt. Wm. Trask, who drew their first breath within the walls of this old mansion. Mr. B., in one of his illustrated books that he has left behind him, showing his refined taste and great genius, gives a colored view of the old house, his home. He remarks that it was used as a tavern from 1690 until about 1740, which would be a period of about fifty years. A part of the ancient bar remains in the lower western room. The house of the father, Capt. Wm., is mentioned in his will of 1666, written a few days before his death. This house is supposed to have been about one hundred feet in the rear of the present edifice. The original well dug by the "old planter" as early it may have been as 1627-8, nearly two and a half centuries ago, is still used. It is quite deep. The water is superlatively good, and the supply abundant. It is said to have been in the front yard of the former house; it is in the rear of the present one.

It will be remembered by those conversant with the early history of Salem that Capt. Trask was an important personage in the town and colony, in a civil and military capacity. He was a particular friend and companion of Governor Endicott, but came to this country before him, probably with Roger Conant. From a document extant in the Massachusetts archives, we learn that in 1648-9, Wm. Trask exchanged two hundred and fifty acres of land with the Governor for five hundred apple trees of three

years' growth. His orchard was just back of the old burial place, where a number of his descendants are interred. In his will before referred to, he especially appoints that his wife Sarah "shall have some of the fruit of the orchard for her own use and a little spot for a garden if shee desires it during the time of her life." We have been told, on good authority, that a portion of the remains of Capt. Trask's mill, behind the homestead, on the Harmony Grove side of the river, was visible in the early part of the present century.

Mr. Trask said that he had been highly gratified with his visit to the "Old Ship Rock" to-day, and was glad to think that this boulder, which, with the land adjoining, was formerly in his family, had come into the possession of the Institute, where it would be so well taken care of and preserved. Had this massive granite rock been found in the neighborhood of his own residence, he thought it not unlikely that before this time that boulder of many tons' weight would have been blasted and converted into stones for underpinnings and for cellar walls.

Mr. F. W. PUTNAM mentioned another singular erratic known by the name of "*Phæton Rock*" which is said to possess more interest geologically than Ship Rock, and expressed the desire that measures should be taken to have the same purchased by the Institute.

After remarks from several members, this subject was, on motion of Mr. W. P. Upham, referred to a committee, to consider and report.

After the transaction of some unimportant business, and the passage of a vote of thanks to the proprietors for the use of the chapel and to other parties who have extended favors—the meeting adjourned.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3.

SALEM, MASS., OCTOBER, 1871.

No. 10.

One Dollar a Year in Advance. 10 Cents a Single Copy.

MEETING NEAR "SHIP ROCK" IN PEABODY,

WEDNESDAY, AUGUST 2, 1871.

[Continued.]

WIGWAM ROCK.

THIS communication from Mr. Jones Very on "*Wigwam Rock*," received since the Rockville meeting, is here inserted as an appendix to the report of that meeting.

Dear Sir:—I wish to correct a statement of mine in the first number of the second volume of the Historical Collections. I there stated "that Wigwam Rock was probably the same as now called Ship Rock." A recent ramble in that vicinity has convinced me that it is not.

Samuel Very's farm was much farther to the west of Ship Rock. It was bounded on the west by Cedar Pond. A cart road runs northeastward from this pond through the woods to a public road, known on the old maps as Putney's road, running from Lowell Street to Newburyport turnpike. Following this cart road from the pond, about a sixth of a mile, I found a large rock, half as large as Ship Rock, making a corner boundary stone of two

old stone walls, covered with lichens, and having every appearance of having been built two hundred years ago. This I believe to be the Wigwam Rock mentioned in the deeds of Edmond Butler and Richard Way. The first, in 1652, is as follows:—"Edmond Butler, Salem, sold to Richard Way, for twenty pounds, fourteen acres of upland, lying next Thomas Goldthwait's land on the north; and ten acres lying on the south and a little below Wigwam Rock; and a piece of land running down to the river." 1st Book, p. 15. The deed of Richard Way to Samuel Very, 1656, runs thus:—"And one acre of land which sometime was Edmond Butler's, where the house of Philip Verren, deceased, formerly stood; and a parcel of land containing about one acre and a half, exchanged with the town, on the south side of the brook near the farm; and also fourteen acres of ground, or thereabouts, bounded with a parcel of ground of Thomas Goldthwait's on the marsh; and the ten acres on the east and to the south, a little below a rock, known by the name of Wigwam Rock; and to the northeast on Thomas Antrim, with a small strip of land running down to the river to the south, containing about two roods; to have and to hold." 1st Book, p. 74.

The ten acre lot described in these deeds was probably that lying to the east and south of this corner boundary stone. The land slopes off from this stone, and on the other side of the cart road makes a steep descent of fifty or sixty feet. Thus the words "a little below" would correspond. It is a suitable place, too, for an Indian camp, as my friend, the farmer, thought. Local tradition is silent. There are a number of other very large boulders, some as large as Ship Rock, a little to the left as you follow this road; but none so likely to be Wigwam Rock as the one I have described. —JONES VERY.

SPECIAL MEETING, TUESDAY, SEPTEMBER 5, 1871.

HON. OTIS P. LORD'S MEMORIAL ADDRESS ON
ASAHEL HUNTINGTON.

THE meeting was called to order by the President at 7.30 P. M., with the following remarks.

MEMBERS AND FRIENDS OF THE ESSEX INSTITUTE:—
We are assembled this evening to pay a tribute of respect to the memory of one who has been, for many years, a prominent citizen in this community. His pleasing and cordial greetings in our streets and the usual places of resort will be long remembered. He had been called by his fellow citizens to occupy several places of honor and trust, and always discharged the duties incumbent thereon to the satisfaction of his constituency. He always took a lively interest in the various institutions of this city, having for their objects the promotion of religion, benevolence, literary or general culture, especially in this institution, which for four successive years (1861—1865) elected him to its presidency.

It is therefore appropriate that we should assemble, on this the first anniversary of his decease, to listen to the reading of a memoir of his life and character, prepared at our request by the Hon. Otis P. Lord.

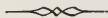
Mr. Lord had long been one of his most intimate and cherished friends, and his acceptance of this duty merits our warmest thanks. Allow me to introduce to you Mr. Lord.

MR. LORD then delivered his memorial address, which was listened to with intense interest and was a faithful and correct delineation of Mr. Huntington's character.*
At its conclusion

* This memoir is printed in the 11th volume of the *Historical Collections* of the Institute.

HON. ALLEN W. DODGE alluded briefly and in fitting terms to the just and beautiful tribute to the memory of our deceased friend which Mr. Lord had presented this evening, and after narrating some reminiscences of the early life of Mr. Huntington, especially when a law student and residing in Newburyport, on his motion it was

Voted, That the thanks of the Essex Institute be presented to the Hon. Judge Lord for his memorial discourse on the late Asahel Huntington, so rich and accurate in its facts, so felicitous and touching in its portrayal of his character, and that he be requested to furnish a copy for publication in the Transactions of the Institute.



REGULAR MEETING, MONDAY, OCTOBER 16, 1871.

The meeting was called to order by the President at 7.30 P. M.

Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From U. S. Department of Agriculture, Aug. 10, 14, 24, 30; American Antiquarian Society, Sept. 19; Bergen Museum, June 30, July 27; Boston Public Library, Sept. 14; Buffalo Historical Society, Aug. 16, Sept. 14; Leeds Philosophical and Literary Society, Aug. 24; London Society of Antiquaries, Aug. 26; Massachusetts Historical Society, Sept. 14; Minnesota Historical Society, Oct. 10; Moravian Historical Society, Sept. 18; Mount Holyoke Seminary, Oct. 12; New York Genealogical and Biographical Society, Oct. 14; Ohio Historical and Philosophical Society, Sept. 28; Pennsylvania Historical Society, Aug. 28; Washington Young Men's Christian Association, Aug. 3, 10; Yale College, Corporation of, Sept. 21; C. A. Baker, Cambridge, Aug. 6; George F. Browning, Salem, Aug. 11; D. A. Chever, Denver, C. T., Sept. 24, 29; Henry Cook, Boston, Sept. 8, 12; J. H. Gannett, East Gloucester, Sept. 19; P. A. Hanaford, New Haven, Sept. 8; James W. Harris, Cambridge, Sept. 22; Daniel H. Johnson, Salem, Aug. 30; Noyes, Holmes & Co., Boston, Aug. 18, Sept. 16, Oct. 6; Jonathan Pierce, Boston, Aug. 12; T. Prime, Rowley, Sept. 8; B. T. Reed, Boston, July 29; J. Hammond Trumbull, Hartford, Sept. 11.

The LIBRARIAN reported the following additions :—

By Donation.

ATWOOD, E. S. The Scotsman, Aug. 4, 7, 8, 1871. Edinburgh Daily Review, Aug. 5, 1871. Scott's Centenary, Aug. 15, 1871.

BAKER, CONRAD, of Indianapolis, Ind. Reports of the Adjutant General of Indiana, 8 vols. 8vo.

BEMIS, LUKE. West Chester, Pa. West Chester Directory, 1857-8, 1 vol. 8vo.

BOLLES, E. C. Catalogus Collegii Sanctissimæ Trinitatis, 1871. 8vo pamph.

BROWN, AMMI. Boston Directories, 1853, 4, 6, 7, 8. 5 vols. 8vo. Patent Office Reports, 1853, 1856, 2 vols. 8vo. Catalogue of Boston Public Library, 1854. 1 vol. 8vo. Light from the Spirit World. 1 vol. 12mo. Boston Almanacs, 1857, 1865. 2 vols. 16mo. Miscellaneous pamphlets, 207.

BYRKIT, J. W., of Indianapolis, Ind. Indianapolis Directories, 1858-9, 1865, 6, 8, 9, 1870. 6 vols. 8vo. Amended Charter and Revised Ordinance of Indianapolis. 1 vol. 8vo. 1859.

CABOT, JOSEPH S. Monographie des Melastomacées, 1 vol. folio. Londres, 1833. Plantarum Icones, 1 vol. folio. Londini, 1789. Nicholson's Encyclopedia, 12 vols. 8vo. Domestic Encyclopedia, 3 vols. 8vo. Say's Political Economy, 1 vol. 8vo. Young Mechanic, 1 vol. 8vo. Abrege Du Dictionnaire De L Académie Françoise, 2 vols. 8vo. Historical Collections of United States, 2 vols. 4to. Universal Dictionary, 1 vol. 4to. Italien Dictionaire, 1 vol. 4to.

CLOGSTON, WM., of Springfield, Mass. Springfield Directories, 1854-5, 1866-7, 1867-8, 1868-9, 1869-70. 5 vols. 12mo. Haverhill and Bradford, 1859, 1 vol. 8vo. Northampton, 1868-9, 1 vol. 12mo. Norwich, 1860, 1 vol. 12mo.

CONSTANT, G., of Smyrna. Armenian Service Book. 1 vol. 16mo.

COX, E. T., of Indianapolis, Ind. First Annual Report of the Geological Survey of Indiana, 1869. 8vo pamph. Maps and Colored Section referred to in the Report of State Geologist. 1869. 2 vols. 8vo.

DEVEREUX, G. H. Tides. New Theory by D. K. Chase. 8vo pamph. Boston, 1871.

EMERTON, J. H. Indianapolis Journal, Aug. 28, 29, 30, 31. Sept. 1, 2.

GOULD — of Topsfield. Baltimore Directory for 1824, 1 vol. 12mo. Johnson's Dictionary, 1 vol. 8vo. Miscellaneous pamphlets, 4.

HOLMES, THOMAS, of Merom, Ind. Catalogues of Officers and Students of Union Christian College for 1864-5, 1865-6, 1866-7, 1867-8, 1869, 1870, 1871, 6 pamphlets, 8vo. Rules and Regulations of U. C. College, 8vo pamph. Course of Study in U. C. College, 1850. 8vo pamph. Constitution and By-Laws of U. C. College, 1859, 8vo pamph.

INDIANAPOLIS STATE BOARD OF AGRICULTURE. Transactions of the Agricultural Society of Indiana, 1853, 1 vol. 8vo. Agricultural and Geological Reports, 1869, 1 vol. 8vo. Agricultural Reports, 1854-5, 1870. 2 vols. 8vo.

JOHNSON, SAM'L. Martin's Philosophy, 1 vol. 8vo. Pike's Arithmetic, 1 vol. 8vo. Laporte's Exercises, 1 vol. 8vo. Ferguson's Astronomy, 1 vol. 8vo. Spanish Grammar, 1 vol. 8vo. Kreh's Latin, 1 vol. 12mo. Morse's Universal Geography, 1 vol. 8vo. Jacob's Latin Reader, 1 vol. 12mo. Arnold's Greek Exercises, 1 vol. 12mo. Emerson's Arithmetic, 1 vol. 12mo. Parker's Philosophy, 1 vol. 12mo. Russell's Elocutionist, 1 vol. 12mo. Fowle's Speller, 1 vol. 12mo. Smith's Arithmetic, 1 vol. 16mo. Worcester's Geography, 1 vol. 16mo. Emerson's Arithmetic, 1 vol. 16mo. Bullion's Grammar, 1 vol. 12mo. Latin Tutor, 1 vol. 12mo. Paley's History, 1 vol. 16mo. Dwyer on Elocution, 1 vol. 12mo. Colburn's Arithmetic, 1 vol. 12mo. Tower's Reader, 1 vol. 12mo. Parker's English Composition, 1 vol. 12mo. Bugard's French Translator, 1 vol. 12mo. Miscellaneous pamphlets, 30.

LEE, JOHN C. Commercial Bulletin. Sept., 1871.

LEVETTE, G. M., of Indianapolis, Ind. Transactions of the Indiana State Horticultural Society, 1867, 1869, 1870, 1871. 4 vols. 8vo.

MASON, LEVANT L., of Jamestown, N. Y. Soldier's National Cemetery at Gettysburg, Pa., 1863, 1 vol. 8vo. Directory of the Oil Regions, 1 vol. 8vo.

MILTON PUBLIC LIBRARY. Catalogue for 1871. 1 vol. 8vo.

MORSE, E. S. Indian Almanac for 1864.

NICHOLS, W. F., Armenian Almanac, 1871. Collections of Monuments of the National Museum. 4 vols., 4to. Naples, 1870.

PACKARD, A. S. Report on the University of the State of Missouri, June 28, 1871. 8vo pamph.

PALFREY, C. W., Steam Engineering by James Stewart, 1 vol. 12mo. Miscellaneous pamphlets and serials, 361.

PICKERING, JOHN, Miscellaneous pamphlets, 57.

RAUCH, JOHN H., of Chicago, Ill. Report of the Board of Health of Chicago for 1867, 8, 9. 8vo pamph.

U. S. DEPARTMENT OF INTERIOR. Ninth Census of the U. S. Statistics of Population, Advance Sheets, 4to pamph.

WARD, MRS. JAMES, Blunt's Coast Pilot, 1 vol. 8vo. Cooper's Tactics, 1 vol. 12mo. Log Books, 7 vols. folio.

WATERS, J. LINTON, of Chicago, Ill. Report of the Chicago and North Western Railway Company. 8vo pamph. 1871. Miscellaneous pamphlets, 10.

WILLARD, JOHN H., of Troy, N. Y. Catalogue of Troy Female Seminary for 1871, 8vo pamph.

By Exchange.

AMERICAN PHILOSOPHICAL SOCIETY OF PHILA. Proceedings, Jan. to July, 1871, No. 86. 8vo pamph.

BERGENSKE MUSEUM IN BERGEN. Indtillinger fra Bergens Formandskab for 1867, 8, 9, 70, 4 vols. 8vo. Forhandlingar, 1869-70. 2 pamphlets, 8vo. Smaakvede af Henrik Krohn, 12mo pamph. Bergenseren eller nogle Ord af det Bergenske Folkesprag, 12mo pamph. Gierftad Grand, 12mo pamph. Miscellaneous pamphlets, 13.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences physiques et Naturelles. Nos. 160, 161, 162, 163. 4 pamph. Genève, Lausanne, Paris, 1871.

BOSTON PUBLIC LIBRARY. Nineteenth Annual Report. 1871, 8vo pamph. Bulletin for July, 1871.

BOSTON SOCIETY OF NATURAL HISTORY. Memoirs, Vol. II. Part. 1, No. II. 4to pamph.

CINCINNATI PUBLIC LIBRARY. Fourth Annual Report, June, 1871, 8vo pamph. Catalogue for 1871. 1 vol. 8vo.

GEORGIA HISTORICAL SOCIETY. Wilde's Summer Rose; or the Lament of the Captive, by Anthony Barclay, Esq. 12mo pamph.

GESELLSCHAFT NATURFORSCHENDER FREUNDE IN BERLIN. Sitzungs-Berichte, Jahre. 1870. 8vo pamph.

IOWA STATE HISTORICAL SOCIETY. Annals, July, 1871. 8vo pamph. Davenport, 1871.

NATURWISSENSCHAFTLICHEN VEREINE IN BREMER. Abhandlungen, Bd. II. Heft. III. 1871. 8vo pamph.

SOCIÉTÉ IMPÉRIALE DES NATURALISTES DE MOSCOW. Bulletin, 1870. No. 2. 8vo pamph.

VEREINES ZUR BEFORDERUNG DES GARTENBAUES, IN BERLIN. Wochenschrift. Jahrg. xiii. Nos. 1-52. 1870.

VERMONT HISTORICAL SOCIETY. Collections. Vol. II. 1 vol. 8vo. 1871.

VERMONT STATE LIBRARY. General Statute of Vermont, 1862, 1 vol. 4to. Vermont, 1862. 1 vol. 4to. Vermont Legislative Documents, 1870-1. 1 vol. 8vo. House Journal, 1870. 1 vol. 8vo. Senate Journal, 1870. 1 vol. 8vo. Laws of Vermont, 1870. 1 vol. 8vo.

YALE COLLEGE LIBRARY. Report of the Sheffield Scientific School, 1870-71. 8vo pamph. New Haven, 1871. Yale College in 1871. 8vo pamph.

PUBLISHERS. American Chemist. American Literary Gazette. American Naturalist. Canadian Naturalist. Christian World. Church Register. Fireside Favor-

ite. Francis's Catalogue. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Ipswich Advance. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Medical and Surgical Reporter. Nation. Nature. Pavilion. Peabody Press. Quarritich's Catalogue. Sailor's Magazine and Seaman's Friend. Salem Observer. Silliman's Journal. Sotheran's Catalogue. Tilton's Journal of Horticulture.

The President mentioned the great loss which science and history have sustained in the destruction of the buildings of the Chicago Academy of Sciences and of the Chicago Historical Society with all their valuable collections and libraries, during the great fire on the eighth and ninth of this month, which had laid in ruins so large a portion of that great and beautiful city of the northwest. He alluded to his recent visit to these institutions and was impressed with the value of their collections, and with the liberality of the citizens of that city in providing such substantial buildings and generous endowments.

THE CHICAGO ACADEMY OF SCIENCES.

In 1856 the formation of a society for the promotion of the Natural Sciences was proposed, and in the following year the Chicago Academy of Natural Sciences was organized. A room was taken and a museum commenced, but owing to the financial crash that came upon the country, very little was done until the year 1859, when it was organized as a corporation under the title of the Chicago Academy of Sciences. In 1862 the lamented Kennicott returned from his three years' exploration in the Arctic regions, richly laden with specimens, a part of which were to become the property of the Academy. In the winter of 1863-4 advantage was taken of Prof. Agassiz' visit to Chicago to gain his opinion of the value of the collections secured by Mr. Kennicott. His endorsement of Mr. Kennicott's work, and his urging the importance of the forming a great museum in the Northwest was so strong an incentive that money was at once secured (a

large sum being given at an impromptu meeting, afterwards greatly increased by the efforts of Mr. Scammon) and the funds placed in the hands of trustees for the formation of a museum, of which Mr. Kennicott was appointed Director. In 1863 Mr. Kennicott, in order to add to the materials of the museum, accepted the appointment on the Russian American Telegraph Survey. From this ill-fated expedition he never returned. At this time the charge of the museum was given to Dr. Stimpson. On June 7, 1866, a large part of the collection of over forty thousand specimens, and all the plates for the first part of the "Transactions" were destroyed by fire. Soon afterwards the text of the same volume while in the hands of the printer met the same fate. The Academy however started forward with renewed vigor, and erected what in any ordinary fire would have been a fire proof building. Its collections and library were rapidly increased, until, at the date of the present calamity it had within its walls one of the, in many respects, most valuable collections in the country, including the larger part of the crustacea and other invertebrates belonging to the Government and Smithsonian collections, and the crustaceans dredged by Pourtales, which had been sent to the Academy for Dr. Stimpson to describe. The State collection of insects made by the late Mr. Walsh, had also been deposited at the Academy.

The Academy had published its first volume of "Transactions" and forty-eight pages of its "Proceedings." The second volume of "Transactions" was in a forward condition, and many pages stereotyped and several plates printed and stored at the Academy.

Mr. F. W. PUTNAM, after remarks on the great loss which science had met, and an account of his visit to the

Academy's rooms in August with a description of the character of the collections destroyed, read the following abstracts from letters which had been received:—

CHICAGO, Oct. 10, 1871.

“Among the other buildings involved, was the Chicago Academy of Sciences. It was considered fire-proof; but, in the fiery furnace, its iron shutters warped like pasteboard, and let in the devouring element, and a precious morsel it lapped up. There were the greater portion of the invertebrata collected by numerous explorers and in distant oceans, originally deposited in the Smithsonian Institution, but transferred here for especial study and description by Dr. Stimpson; the collection of mammals and birds made by Dr. Vaille, which cost him years of labor and travel; two skeletons of the mastodon; the collections of Kennicott in the Arctic region; of Stimpson on the Florida reefs and the Gulf Coast; the Cooper collection of shells, purchased by George Walker; an interesting series of implements in pottery and lava—the work of a prehistoric race—exhumed at San Jose, Mexico, presented by J. Y. Scammon; a large collection of minerals, rich in crystalline forms, which was secured through the exertions of Mr. E. S. Chesboro; an extensive suite of the coals and iron ores of the Northwest, and other objects of natural history. The Academy had become the resort for Scientific men desirous of studying not only the natural history of the Northwest, but of the whole country. Dr. Stimpson's MSS. relating to the invertebrates collected on the Japan Expedition, illustrated by numerous drawings—the labor of years, and ready for publication—were also consumed. But a short time ago Mr. J. Gwyn Jeffreys spent several days in examining our collections in reference to deep sea dredgings. But all are gone. The patrons through whose munificence the Academy was built up have shared in the general calamity. Many of the specimens cannot be replaced; but when the Academy shall arise like a Phœnix from its ashes is a matter of doubt. The present is not a time for consultation while the embers are yet alive, and while the smoke is yet ascending.”—J. W. FOSTER.

CHICAGO, Oct. 12.

“Please stop the sale of the books and papers in the agency. We have not a copy left of any of them. The Academy building and everything in it was utterly destroyed—not a scrap of paper or a specimen saved. My own books, collections, MSS. and drawings—twenty years' work all gone!”—WM. STIMPSON.

Mr. Putnam then offered the following resolutions,

which were seconded with remarks from Messrs. E. C. Bolles and E. S. Morse, the president and others, and unanimously passed :—

Resolved. That the Essex Institute tenders its sympathy to its sister society, the CHICAGO ACADEMY OF SCIENCES, in her second trial by fire, in which she has lost not only her buildings, but all her specimens, books and publications.

Resolved. That the Institute hereby promises to furnish such of its publications as the Chicago Academy of Sciences may desire, and to render such other assistance as possible in the efforts of the Academy to arise for a second time from the ashes.

The President stated that

THE CHICAGO HISTORICAL SOCIETY

Was organized in 1856 through the efficient efforts of Rev. William Barry, formerly of Lowell, Mass., and was chartered in 1857. It had accumulated a valuable library of more than fifteen thousand bound volumes, a large collection of pamphlets well arranged and catalogued, newspapers and other historic data and memorials, a large part of which is irrecoverable. It had a considerable collection of paintings, statuary, etc., also manuscripts and other materials to elucidate the early history of Chicago and of the late civil war.

The following may be specified, indicating the extent of the loss, which not only this society but the students of American History have sustained. The complete journals of the father of the late Major J. H. Kinzie, extending from 1802 (before the construction of Fort Dearborn) to 1826, containing nearly one thousand names of residents and visitors during the earliest period (now traditional), of the local modern history of that city; complete files of the public journal of Richmond, as preserved

by the official head of the Confederate States; and the memorable proclamation of President Lincoln, in the original draft, giving liberty to the enslaved.

By the liberality of the citizens of Chicago, who held in high estimation the influence and labors of this society, a building, supposed to be fire-proof, forty by fifty feet, and designed to be the right wing of the future main edifice, was erected a few years since at an expense of over \$60,000, including the land, for the depository of its library and collections, and a fund was raised in addition thereto, yielding an annual revenue of more than one thousand dollars for their care and increase.

Mr. James Kimball proposed that a committee of three be appointed by the chair to draft resolutions of sympathy to be sent to the Chicago Historical Society.

The proposition was adopted and Messrs. James Kimball, E. C. Bolles and the Secretary were appointed for the purpose.

The committee retired, and after a short absence, reported the following resolution, which was unanimously adopted.

Whereas, the Essex Institute has learned with great regret that in the late disastrous fire at Chicago the building, library and collections of the Historical Society of that city were entirely destroyed, therefore :

Resolved. That the Essex Institute desires to assure the Chicago Historical Society of the profound sympathy and its earnest wish both to replace all the publications of the Institute which were in that library, and to afford all other aid which it may be in its power to give.

THE SALEM AND BOSTON STAGE COMPANY.

A communication from Mr. WILLIAM H. FOSTER was read, containing his reminiscences of the days of stage coaches in Salem and of the Salem and Boston stage

company, during the period he was in the office of the company. The scenes and incidents at the stables on Union Street, and at the Old Sun Tavern then located on the site of the present Bowker Building on Essex Street, were very graphically described, alluding especially to the bustle, activity and stir attending the arrival and departure of the coaches, the great events of the day. Anecdotes and short notices of the drivers and other employès were interspersed, portraying vividly the characters of those who were attached to the establishment. These incidents occurred some forty-five or fifty years since, when the turnpikes and the stage coaches were in the ascendancy and had made great advance over the previous modes of travel, displacing to a considerable extent private conveyances and the little wayside inns. A few years elapsed and these in turn retreated before the advent of railroads, which have now connected the whole country with a network of iron bands and have contributed so much to the rapid transportation of passengers and merchandise. At that period this company was a great establishment, and not inferior to any other line in the United States, in the character of its agents and drivers, and in the superiority of its teams and coaches; and perhaps in advance of them, being the first to introduce the swing rack and foot board, as it was termed; and after these the splendid steel spring coaches. These coaches were mostly built under its own supervision, in its own shops, and by its own mechanics.

There were Stephen Daniels and Benjamin Bray, coachbody makers; Smith and Osgood Bradley, wheelwrights (Bradley is now a car builder); John McGlue and David Harding, and a half a score of others, blacksmiths; John Chipman, John Mackie and John Frye, saddlers and carriage trimmers; Joseph D. Saddler and Daniel C. Man-

ning, painters. The gigs and coaches got up by the company from 1821 (when it was incorporated) to 1834-5 and 6, were far superior in strength and finish to any in present use. William Manning, familiarly known as "Sir William," was the general superintendent, Henry Cross the agent at Boston, and Samuel Manning had the charge of the stable at the "Marlborough" in Boston, and afterwards fitted out the stages with Mr. Lancaster and ran the expresses to overtake the stages, etc.

The coaches for Boston left at 7, 8, 9, 10, A. M., 1.30 and 3 P. M., and arrived from Boston at 11 A. M., 1, 5, 6, 7, 8, P. M. Any number of extras went over the road at all times both day and night. There was also a coach to and from Marblehead, driven by Thompson, and three times a week to Haverhill driven by D. Sanderson and afterwards by Pinkham.

The drivers were James Potter, left at 7 A. M., the first out in the morning; Woodbury Page at 8 A. M.; Charles Cross, afterwards Albert Knight, and then B. Savory at 9 A. M.; Moses Shaw at 10 A. M. on Monday, Wednesday and Friday, and Albert Knight, afterwards Jacob Winchester on Tuesday, Thursday and Saturday; Lot Peach at 1.30 P. M. The Major Shaw went out at 3 P. M., and this closed the outward or up trips to Boston for the day. Peter Ray afterwards drove this last route.

The first coach in from Boston was at 11 A. M., the one that left the afternoon previous at 3 o'clock; the Gloucester at 1 P. M., Potter at 5, Page at 6, Savory at 7 and Peach at 8 P. M.

There were many extra drivers, Wm. Winchester, Joshua Butman, Joseph Potter, Benjamin Leavitt and others. During the summer some of the regular and several of the extra drivers were away on journeys. There

were between fifty and sixty men on the pay roll of the company, all good and reliable.

To Potter was assigned the honor of driving Lafayette, on his visit here in August, 1824, and on this occasion had an open barouche and team of splendid horses, and drove him through to Newburyport. When Henry Clay made his visit in 1833, Page and his team of milk-whites were in attendance and took him over the road from the residence of Hon. Nathaniel Silsbee on Pleasant Street to the Tremont House, Boston, in sixty minutes. Joseph Smith, who had been in the livery business for many years was employed by the Committee of Reception during Gen. Jackson's visit in 1833, and used on the occasion an open barouche and had a team of four coal black horses.

Mr. Daniel C. Manning first entered the service of the company in 1823 as an office boy and carried round the letters and bundles on the arrival of the stages. For the small packages a horse and gig was always ready on the arrival of each coach, and here began the first express business of this county.

From here Daniel went into the company's paint shop, then in charge of Joseph D. Sadler, where he served a regular apprenticeship and became a first-class carriage painter, in which business he continued for some years, combining with it the letting of a few horses. The paint shop was then abandoned and he went very extensively into the livery business with Mr. Joseph Smith.

We see him driving, in that fearful storm on the 8th of February, 1870, Prince Arthur to the Peabody funeral, and for eight consecutive hours not leaving his box. Like Mr. Peabody, he started a poor boy, but by his untiring industry, and his natural resources, he is now rated among the self made capitalists. He also had the honor

of driving (or running), President Polk through the city, on the occasion of his visit here in 1847.

Before the incorporation of the Salem and Boston Stage Co., in 1821, a line of stages had been run by Mr. Richard Manning, and afterwards by his sons, William, Robert and Samuel, and in 1810 or 1811 the Mannings bought out the old Burrill line of stages. The Burrill stables were in the rear of Court (now Washington Street), and their office was in the rear of where Nourse's fruit store now stands.

In 1815 or 1816 a company was formed of the Messrs. Manning, Henry Cross and others. Holton Dale, who will be remembered by many as the greatest whip in the county, drove the first coach out at 7 o'clock A. M., and Willis, a large and splendid looking man, drove the first coach in from Boston, and afterwards Carpenter. Dale always had elegant horses; his team of sorrels were square docked, and always trimmed and combed to a hair; his coach in order, and run very still, as about every morning he went over it himself, and screwed up all the nuts. Those who were in college from, say 1810 to 1816 will remember Dale, as he claimed as a right the privilege of driving home the students at the vacations.

Instead of his coach he sometimes used an open basket carriage which would hold fifteen or eighteen—but as there was no convenience for baggage, that had to be sent by another team. With the light basket carriage he could spin off ten or twelve miles the hour, and land his passengers from Cambridge, say seventeen or eighteen miles, in an hour and thirty or forty minutes.

Once, about Christmas time, after he had started, there came up a furious snow storm, and by the time they reached Salem the basket was full of snow and students closely packed together.

But these reminiscences are so far extended that I will close. Many of the actors have paid the last debt of nature, and those who are left are getting to be among the old folks. The following list of employeès, so far as can be recalled, is annexed.

DRIVERS.

Holton Dale,
 ——— Willis.
 ——— Carpenter.
 James Potter,
 Woodbury Page,
 Samuel Shaw,
 Moses Shaw,
 Albert Knight,
 Jacob B. Winchester.
 William Winchester,
 Peter W. Ray,
 Benjamin Savory,
 Lot Peach,
 Charles Cross,
 William Cross,
 Daniel Moore,
 John Hathaway,
 Alden Harris,
 John Lane,
 J. C. Trask,
 James Trask,
 Addison Center,
 Charles Sargent,

John Miller,
 Jonathan Cass,
 Benjamin Thompson,
 Charles Dearborn,
 Thomas Adams,
 Joshua Bateman,
 Joseph Potter,
 Daniel Sanderson,
 Thomas Dodge,
 Benjamin Leavitt,
 Isaac Pinkham,
 Peter Stevens,
 Thomas Adams,
 J. B. Wheelock,
 Noah Knox.

SADDLERS.

Joseph H. Saddler.
 John Chipman,
 John Mackie,
 John Frye.

BLACKSMITHS.

John McGlue,

David Harding,
 Peter McDermott.

WHEELWRIGHTS.

James Smith,
 Osgood Bradley.

CARRIAGE-BODY
MAKERS.

Stephen Daniels,
 Benjamin Bray.

PAINTERS.

Joseph D. Sadler.
 Daniel C. Manning.

CLERKS.

Henry Cross,
 D. M. Lancaster,
 Daniel L. Procter,
 William H. Foster.

The character and time of the meetings of the Institute were zealously discussed, most of the members present taking part. All were earnest to have the meetings prove more attractive to the public and to better meet the needs of the community. It was then

Voted, That the next meeting be held on the first Monday in November at 7½ o'clock, and that the matter of the arrangement and order for meetings for the coming winter be referred to the lecture committee, with instruction to report at the next meeting.

Adjourned.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., NOVEMBER, 1871. No. 11.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, NOVEMBER 6, 1871.

THE President in the chair. Records read.

THE SECRETARY read the following letter from Dr. William Stimpson, secretary of the Chicago Academy of Science, addressed to Vice President F. W. Putnam.

CHICAGO, Oct. 26, 1871.

I have just received your very kind letter of the 19th inst. Our postal delivery is deranged on account of the fire, in which the post-office did not escape. I have also received Packard's letter and that of the Secretary of the Institute. I am on the point of starting for the East, and have only time to write a line of thanks for them. When I get to Maryland I will answer them in full. We have held one meeting since the fire, and the copy of resolutions of the Essex Institute arrived in time for it. The Academy is going on, although we are obliged to commence at the very beginning again, but we are greatly encouraged by the offers of aid received from all sides.

With many thanks for your own kind offers I remain,

Very sincerely yours, WM. STIMPSON.

Letters were also read from the following :—

American Congregational Association, Oct. 21; Berlin Akklimatisations Verein, June 20; Brunn, Naturforschende Verein, May 31; Buffalo Historical Society, Oct. 27; Chemnitz, Naturwissenschaftliche Gesellschaft, June; Danzig, Naturforschende Gesellschaft, June 24; Freiburg, Naturforschende Gesellschaft, May 12; Kjobenhavn, K. Danske Videnskabernes Selskab, Sept. 14; Massachusetts Horticultural Society, Oct. 28; New England Historic-Genealogical Society, Oct. 28; New York Genealogical and Biographical Society, Oct. 20, 21; New York Historical Society, Oct. 28; New York Lyceum of Natural History, Oct. 30; Riga, Naturforschende, Verein, May 19-31; Wiesbaden, Nassauischen Vereins für Naturkunde, May 1; Hanaford, P. A., New Haven, Oct. 25; Hough, F. B., Lowville, Oct. 25.

The LIBRARIAN reported the following additions : —

By Donation.

BOLLES, E. C. Catalogue of Officers and Students of Tufts College, 1871-72. Record of Lockwood's New Academy, Sept. 1871.

FOOTE CALEB. Files of several county papers for Aug., Sept., Oct. 1871.

GREBLE, EDWIN, of Philadelphia, Penn. Memoir of Lieut. Col. John T. Greble of U. S. Army. 1 vol. 4to. Phila. 1870. (Printed for private circulation.)

GREEN, S. A., of Boston. Miscellaneous pamphlets, 16.

HOLMES J. C., of Detroit, Mich. Constitution and By-laws of the Audubon Club in Detroit. 16mo pamph.

JOHNSON, THOMAS H. The Life of Joice Heth. 12mo pamph. New York. 1835.

LEE, JOHN C. Commercial Bulletin for Oct, 1871.

PHILLIPS, WILLARD P. Agriculture of Massachusetts, by C. L. Flint. 1 vol. 8vo. Boston. 1870-71. Reports on the Statistics of Labor. 1871. 1 vol. 8vo. Railroad Commissioners' Report, 1870. 1 vol. 8vo. Thirty-fourth Annual Report of the Board of Education. 1 vol. 8vo. Manual for the General Court, 1871. 1 vol. 12mo. Miscellaneous pamphlets, 4.

SMITH, Mrs. GEO. H. Martyrs, 2 vols. 4to. New York, 1794. History of American Missions, 1 vol. 8vo. Christian Spectator, 3 vols. 8vo. Essays on a Congress of Nations, 1 vol. 8vo. Missionary Herald, 1 vol. 8vo. Ely's Contrast, 1 vol. 8vo. Christian Researches, 1 vol. 12mo. Indian Wars, 1 vol. 12mo. Missionary Gazetteer, 1 vol. 12mo. Life of Whitefield, 1 vol. 12mo. Carpenter's Geography, 1 vol. 12mo. Life of Philip Henry, 1 vol. 12mo. Life of Coustos, 1 vol. 12mo. History of Andover, 1 vol. 12mo. The Assembly's Digest, 1 vol. 12mo. Anti-Slavery Manual, 1 vol. 16mo. Salem Directories, 1842, 1846, 1850, 1851, 1855, 1859. 6 vols. 12mo. Flavius Josephus, 1 vol. folio. Missionary Herald, 74 nos.

SPOONER, THOMAS, of Cincinnati, Ohio. Memorial of William Spooner, and of his descendants, 1637 to 1871. 1 vol. 8vo. (Private Edition.)

WALKER, Francis, of London. Notes on Chalcidie, 12mo pamph. List of Hymenoptera, 12mo pamph. List of Coleoptera, 12mo pamph.

By Exchange.

AKKLIMATISATIONS VEREIN IN BERLIN. Zeitschrift für Acclimatisation, Jahrg VIII, 1870. Nos. 1-12. Jahrg IX, 1871, Nos. 1-5. 3 pamphs. 8vo.

BOSTON PUBLIC LIBRARY. Bulletin for Oct., 1871. 8vo pamph.

CROSSE ET FISCHER. Journal de Conchyliologie. Tome X, No. 4. 1870.

DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA. Forhandlinger i Videnskabs Selskabet i Christiania, Aar, 1869, 1870, 8vo pamphs. Det Kongelige Norske Frederiks Universitets Aars beretning for Aaret 1869, 1870. 8vo pamphs. Index Scholarum, 4to pamph. Le Nèvé De Justidal et Ses Glaciers par C. de Sene. 4to pamph. Lymphkejertlernes Anatomi af G. Armaner Hansen, 4to pamph. Omeni Sommeran, 1869, foretagen entomologisk Reisse af H. Siebke. 8vo pamph. Magnetiske Underspgelser foretagen i 1868 af E. A. H. Sinding, 8vo pamph.

LITERARY AND HISTORICAL SOCIETY OF QUEBEC, Transactions of, 1870-71. New Series, Part VIII, Quebec, 1871. 8vo pamph.

NASSAUSCHEN VEREINS FÜR NATURKUNDE OF WIESBADEN. Jahrbücher Jahrg XXIII, XXIV. 1 vol. 8vo. Wiesbaden, 1869-70.

NATURFORSCHENDE GESELLSCHAFT IN DANZIG. Schriften, Neue Folge, Band II. Heft 3, 4. Danzig. 1871.

NATURFORSCHENDE GESELLSCHAFT IN FREIBURG, BADEN. Berichte über die Verhandlungen. Bd. V, Heft 3, 4. 1871.

NATURFORSCHENDE VEREIN IN BRUNN. Verhandlungen, Band VIII, Heft 1-2. 2 pamphs. 8vo.

NATURFORSCHENDER VEREIN IN RIGA. Arbeiten, Heft, 3, 4. 1870-71.

NATURWISSENSCHAFTLICHEN GESELLSCHAFT IN CHEMNITZ. Dritter Bericht, 1868-70. 8vo pamph.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Register for Oct., 1871.

NEW YORK GENEALOGICAL AND BIOGRAPHICAL SOCIETY. Genealogical and Biographical Record. Vols. 1, 2. 1870-71.

PHYSIKALISCH-MEDICINISCHE GESELLSCHAFT IN WÜRZBURG. Verhandlungen der Physikalisch Medicinische Gesellschaft in Würzburg, Herausgegeben von der Redactions. Commission der Gesellschaft, Neve Folge, Band II. Heft 1-2. 8vo.

SOCIETY VAUDAISE DES SCIENCES NATURELLES IN LAUSANNE. Bulletin, Vol. x. No. 63. 8vo. pamph.

PUBLISHERS. American Chemist. American Literary Gazette. American Naturalist. Christian World. Gardener's Monthly. Gloucester Telegraph. Hardwicke's Science Gossip. Haverhill Gazette. Historical Magazine. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Pavilion. Peabody Press. Silliman's Journal. Quarritch's Catalogue. Salem Observer.

The following donations to the Historical Department were announced:—

S. A. CHEVER, of Melrose, Engraving of the Pickman House on Essex Street as it appeared in 1830.

T. J. DREER, of Philadelphia, Fourteen engraved portraits of eminent Americans.

THOMAS H. JOHNSON, Several engravings of Baptist ministers.

CHARLES OSGOOD, Picture of Capt. Billop's house at Bently, Staten Island.

Mr. F. W. PUTNAM exhibited a fine head of a male American Buffalo or Bison (*Bos Americanus*), which had recently been received from David Augustus Chever, Esq., of Denver City, Colorado, a donation to the museum; and offered some remarks upon its habits and range. The Buffalo formerly roamed over nearly the whole area of the United States; more recently it has been limited to the prairies between the Missouri and the Rocky Mountains, where it is seen in herds of several thousands, blackening the plains as far as the eye can view; with the advance of civilization, it will become yet more restricted, and finally it will retreat to the fastnesses of the mountains, where it may for some years linger.

Mr. F. W. PUTNAM occupied the greater part of the

evening with a lecture on the prehistoric inhabitants of this country, known under the general name of the "Mound Builders."

After stating the conclusions reached by Squier, Davis, Haven, Wilson, Lubbock, Whittlesey, Foster, Newberry, Jones and others, and his own views derived from a careful comparison of the facts that had been gradually ascertained, and calling attention to the different views that had been presented relating to the origin, course of migration, and decay of the mound building race; he called special attention to the large number of fortifications and fortified towns that had been discovered in various parts of the country, from New York and Pennsylvania west to the Wabash River and in the Mississippi Valley south to Tennessee; and gave an account of a recent examination he had made of an

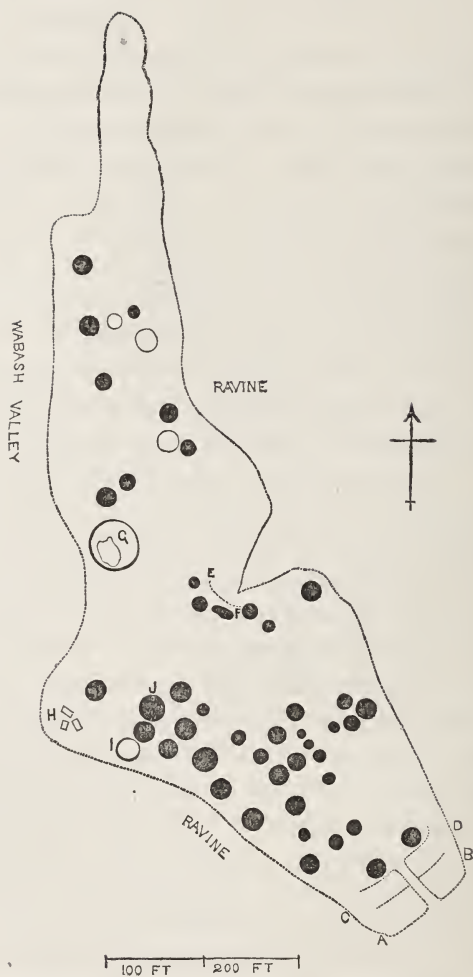
ANCIENT FORTIFICATION ON THE WABASH RIVER.

After the adjournment of the Indianapolis meeting of the American Association for the Advancement of Science in August last, it was his good fortune to be able to take advantage of the kind offer of Prof. Cox, State Geologist of Indiana, to make an examination of an ancient earth work at Merom, Sullivan Co., Ind., which had been christened "Fort Azatlan" by Mr. John Collett, Assistant of the Survey, and is so designated on the geological map of the County. Accompanied by Messrs. Cox, Collett, Cooke and Emerton, and provided with free passes over the Terre Haute and Indianapolis, and the Evansville and Crawfordsville Railroads, by the open-handed liberality of the officers of the roads; and cordially entertained and greatly assisted by T. Kearns, Esq., President Holmes, the Doctors Harper and other kind friends in Merom; he was able to make a partial examination of

the earth work, of which the following engraving, prepared from a large plan made by Mr. J. H. Emerton, from plottings taken with the assistance of Messrs. Kearns and Collett, gives the outline and general character.

The fort is situated on a plateau of loess, about one hundred and seventy feet in height above low water, on the east bank of the river. On the river side, the bank, which principally consists of an outcrop of sandstone, is very steep, and forms the western line of the fortification, while deep ravines add to its strength on the other sides; the weak points being strengthened by earth works. The general course of the work is from the north, where it is very narrow (not over 50 feet) owing to the formation of the plateau, south along the river bank about 725 ft. to its widest portion (at *H*) which is here about 375 ft. east and west. From this point it follows a deep ravine south-erly about 460 ft. to the entrance end of the fort. The bank traversed by the entrance road is here much wider than at other portions, and along its outer wall, running eastward, are the remains of what was evidently once a deep ditch. The outer wall (*A, B*) is about 30 ft. wide and is now about 1 1-2 ft. high; a depressed portion of the bank, or walk way, then runs parallel with the outer wall, and the bank (*C, D*) is then continued for about 20 ft. further into the fort, but of slightly less height than the front. Through the centre of these banks there are the remains of a distinct roadway about 10 ft. in width.

From the northeastern corner of this wide wall the line continues northwesterly about 350 ft. along the eastern ravine to a point where there is a spring and the ravine makes an indenture of nearly 100 ft. to the southwest. The mouth of the indenture is about 75 ft. in width and the work is here strengthened by a double embankment (*E, F*). The natural line of the work follows this inden-



Fort Azatlan, on the Wabash River at Merom, Ind.

ture and then continues in about the same northerly course along the banks of the ravine, to the narrow portion of the plateau about 550 ft. to the starting point.

There is thus a continued line, in part natural and in part artificial, which if measured in all its little ins and outs would not be far from 2450 ft.

Besides the spring mentioned as in the indenture of the eastern ravine, there is another spring in the same ravine about 175 ft. to the north of the first, and a third in the southwestern ravine about 125 ft. to the west of the southwestern corner of the work.

Looking at all the natural advantages offered by this location it is the one spot of the region, for several miles along the river, that would be selected to-day for the erection of a fortification in the vicinity, with the addition of the possession of a small eminence to the north, which in these days of artillery would command this fort. Having this view in mind a careful examination was made of the eminence mentioned, to see if there had ever been an opposing or protective work there, but not the slightest indication of earth work fortification or of mounds of habitation was discovered. Though some five or six miles up the river on the Illinois side, at Hutsonville, a large group of some fifty-nine mounds of habitation were investigated, about which more will be said at another time.

The interior of this fortification contains much of interest and its history may yet be in part made out by a more extended examination than it was possible to make during the few days given to its exploration.

On crossing the outer wall a few low mounds are at once noticed, and all around are seen large circular depressions. At the southern portion of the fort these depressions, of which there are forty-five in all, are most numerous, thirty-seven of them being located south of a line

drawn from *E* on the northern side of the indenture of the eastern ravine to the projecting extreme western point of the fort at *H*.

These depressions vary in width from ten to twenty-five or thirty feet, and are irregularly arranged, as shown by the accompanying engraving, where they are represented by the black circles. One of the six depressions opposite the indenture of the eastern ravine is oval in shape, and is the only one that is not nearly circular, the others varying but a foot or two in their diameters.

Two of these depressions were dug into and it was found that they were evidently once large pits that had gradually been filled by the hand of time with the accumulation of vegetable matter and soil that had been deposited by natural action alone. In some instances large trees are now growing in the pits and their many roots make digging difficult. A trench was dug across one pit (*J*) throwing out the soil carefully until the former bottom of the pit was reached at a depth of about five feet. On this bottom ashes and burnt clay gave evidence of an ancient fire, and at a few feet on one side several pieces of pottery, a few bones of animals, and one stone arrowhead were found. A spot had evidently been struck where food had been cooked and eaten, and though there was not time to open other pits there is no doubt but that they would tell a similar story, and the legitimate conclusion to be drawn from the facts is that these pits were the *houses* of the inhabitants or defenders of the fort, who were probably further protected from the elements, and the arrows of assailants, by a roof of logs and bark or boughs. The great number of the pits would show that they were for a definite and general purpose and their irregular arrangement would indicate that they were not laid out with the sole idea of acting as places of defence, though those near

the walls of the fort might answer as covers from which to fire on an opposing force beyond the walls, and the six pits near the eastern indenture, in front of three of which there are traces of two small earth walls, and the two commanding the entrance of the fort, would strengthen this view of the use of those near the embankment.*

In many of the ancient fortifications that have been described by Mr. Squier and others, pits have been noticed, but they have been only very few in number and have been considered as places for the storage of food and water. The great number in this small earthwork, with the finding that one at least was used for the purpose of cooking and eating food, is evidence that they were for some other purpose here, though some of the smaller ones may have answered for storehouses.

The five small mounds were situated in various parts of the enclosure. The largest (*G*) was nearly fifty feet in diameter and was probably originally not over ten feet in height. It had been very nearly dug away in places, but about one-fifth of the lower portion had not been disturbed. From this was exhumed one nearly perfect human skeleton and parts of several others that had been left by former excavators. This mound also contained several bones of animals, principally of deer, bear, opossum and turtles; fragments of pottery, one arrowhead, a few flint chips, and a number of thick shells of unios, two of which had been bored near the hinge. This mound has yielded a number of human bones to the industry of Dr. H. Frank Harper who has furnished a description of them which will be included in an article to appear in the *Naturalist*.

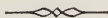
The second mound (*I*) which was partly opened, was some twenty-five feet in diameter and a few feet in height, though probably once much higher. In this a number of bones of deer and other animals were found, several

pieces of pottery, a number of shells and a few human bones. The other three mounds, one of which is not over ten or twelve feet in diameter and situated the furthest to the north, were not examined internally.

The position of all the mounds, within the enclosure, which are indicated by the white circles on the cut, is such as to suggest that they were used as observatories, and it may yet be questioned if the human and other remains found in them were placed there by the occupants of the fort, or are to be considered under the head of *intrusive* burials by a later race. Perhaps a further study of the bones may settle the point. That two races have buried their dead within the enclosure is made probable by the finding of an entirely different class of burials at the extreme western point of the fortification, indicated on the engraving by the three quadrangular figures at *H*. At this point Dr. Harper, the year previous, had discovered three stone graves, in which he found portions of the skeletons of two adults and one child. These graves, the stones of one being still in place, were found to be made by placing thin slabs of stone on end, forming the sides and ends, the tops being covered by other slabs, making a rough stone coffin in which the bodies had been placed. There was no indication of any mound having been erected, and they were placed slightly on the slope of the bank. This kind of burial is so distinct from that of the burials in the mound, that it is possible that the acts may be referred to two distinct races who have occupied the territory successively, though they may prove to be of the same time and simply indicate a special mode adopted for a distinctive purpose.

The short time given to the examination of this interesting work left many important points unsettled, and since his return the relics discovered have not been looked at.

At a future meeting Mr. Putnam trusted to be able to give a more decisive opinion on several points, after a careful study of the specimens shall have told their story so far as it can be read from old bones and broken pottery.



QUARTERLY MEETING, WEDNESDAY, NOVEMBER 8, 1871.

President in the chair. Records read.

Rev. E. C. Bolles was added to the Lecture Committee, and Mr. G. D. Phippen to the Publication Committee.

S. W. Arrington, of Salem, was elected a member.



REGULAR MEETING, MONDAY, NOVEMBER 20, 1871.

The President in the chair. Records read.

The SECRETARY announced the following correspondence:—

From Philadelphia Library Company, Nov. 11; Keene Natural History Society, Nov. 10; J. H. Emerton, Providence, R. I., Nov. 13; James P. Franks, Salem, Nov. 7; B. Perley Poore, Indian Hill Farm, Nov. 11; S. Salisbury, Worcester, Nov. 13.

The LIBRARIAN reported the following additions:—

By Donation.

BUSWELL, E. W., of Boston. Miscellaneous pamphlets, 20.

COGSWELL, WM. Report on the Statistics of Labor in Mass. 1871. 1 vol. 8vo. Marine Insurance Report. 1870, 1871. 2 vols. 8vo. Report on the Statistics of Labor in 1871. 2 vols. 8vo. Ceremonials at the Unveiling of the Statue of Gov. John A. Andrew, Feb. 14, 1871. 10 copies. Massachusetts State Documents for 1870, 1871. Report of the Commissioners on Inland Fisheries. Jan., 1871. 8vo pamph. Miscellaneous pamphlets, 7.

DORCHESTER, D. Catalogue of Officers and Students of Middlebury College, 1871-72. Catalogue of Officers and Students of Tufts College, 1870-71.

FRANKS, J. P. History of Pennsylvania Volunteers, by S. P. Bates. 4 vols. 8vo.

GILLAN, JOHN. British Shipmasters' Guide. 1 vol. 8vo. Bowditch Navigator. 1 vol. 8vo. Blunt's Coast Pilot. 1 vol. 8vo. Miscellaneous pamphlets, 14.

KIMBALL JAMES. Salem Directories, 1866, 1869. 2 vols. 8vo. Report on Prisons and Prison Discipline. 8vo pamph. Report of the School Committee of Salem, Jan., 1868.

MORSE, E. S. Remarks on the Adaptive Coloration of Mollusca by donor. 8vo pamph. Remarks on the Relations of Anomia, by donor. 8vo pamph.

PALFRAY, C. W. Miscellaneous pamphlets, 9.

POORE, B. PERLEY, Washington, D. C. Syracuse Directory, 1857. 1 vol. 8vo. N. E. Mercantile Directory, 1849. 1 vol. 8vo. Gazetteer of the St. Joseph Valley. 1 vol. 8vo. Cincinnati in 1851. 1 vol. 8vo. Boston Directory, 1847-8. 1 vol. 8vo. Washington and Georgetown Directory for 1860. 1 vol. 8vo. Afleck's Calendar and Annals for 1851. 1 vol. 12mo. National Calendar and Annals of U. S., 1831, 1832, 1833. 3 vols. 12mo. Register of Officers and Agents in U. S., 1820. 1 vol. 12mo. Newburyport Directories, 1851, 1852. 2 vols. 12mo. Boston Almanac. 1850. 1 vol. 16mo. Almanacs, 75. Congressional Directories, 19 nos. Navy Register, 4 nos. Army Register, 4 nos. Miscellaneous pamphlets, 7.

WALKER, FRANCIS L., of London. Notes on Chalcidiae. Parts III, IV. 2 pamphs. 8vo.

WASHINGTONIAN HOME. Report for 1871. 8vo pamph.

By Exchange.

BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences physiques et naturelles. Nos. 164, 165. 8vo pamph. Genève, 1871.

MARYLAND HISTORICAL SOCIETY. The First Steamboat Voyage on the Western Waters. By J. H. B. Latrobe. 8vo pamph.

PROVIDENCE ATHENÆUM. Report of the Directors of, Sept. 25, 1871. 8vo pamph.

SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY IN TAUNTON, ENGLAND. Proceedings of, 1870. 8vo pamph.

PUBLISHERS. American Literary Gazette. American Naturalist. Gloucester Telegraph. Haverhill Gazette. Ipswich Advance. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Our Dumb Animals. Nation. Nature. Peabody Press. Salem Observer.

The following donations to the Historical Department were reported.

BOLLES, E. C. Plan of Chicago, showing the burnt district.

GILLAN, JOHN. Miscellaneous Charts, 30.

TRASK, W. B., of Dorchester. View of the Trask House, Boston St., taken October, 1871. Miscellaneous Charts, 8.

LITTLE AUK.

The PRESIDENT mentioned that among the recent additions to the museum were several specimens of the Little Auk (*Mergulus alle*) which were found at Middleton, Hamilton, Salem and other places, driven inland by the gale of the Wednesday preceding; this storm was considered the most severe, and the tide the highest, of any since April, 1851. Some of the above specimens were exhausted by buffeting weather and fatigue, so that they

were easily taken by the hand. We learn by the newspapers that specimens of this bird were found at Lowell, Dracut, Lawrence, Haverhill, Gloucester, Rockport, Sudbury, Concord and many other localities. This little bird known to the mariners as the "Greenland Dove," from its quaint resemblance to that family of birds, is a dweller in the Arctic Circle, seldom proceeding far from those desolate and glacial regions except when accidentally driven by severe storms. Occasionally, specimens are found on the coast in the wintry season. It may be considered a rare occurrence to observe them in such numbers and extending over so large a territory.

Mr. A. C. GOODELL, JR., gave a sketch of the progress of legislation, through the period between the arrival of the charter of the province of Massachusetts Bay, in 1692, and the adoption of the Constitution in 1780.

After briefly alluding to the colonial charter, and the laws and jurisprudence of the colony, and recalling the prominent political events of that period as described by Mr. Upham in his address to the Institute at the meeting of April 5, 1869, he proceeded to show that a great change, both in laws and manners, took place here shortly after the new charter went into operation. Then fashions in dress began to be copied from the French; music began to be cultivated; domestic comforts and luxuries were increased; assemblies for secular purposes and amusements were more open and frequent; the barriers of rank were broken; the current secular literature of England began to receive general attention; newspapers appeared, and the printing press was put to more general use. The public mind began to lose something of the absorbing interest it had formerly manifested in theological speculations, and was turned to the consideration of the problems of

trade, the right of liberty of conscience, freedom of speech and of thought, and improvements in agriculture, the mechanic arts and architecture: so that, in short, the issues which had excited the warmest controversies, and had drawn general attention in colonial times, were nearly forgotten in the new and more practical differences respecting matters of social and political economy, culminating finally in the one great issue of independence of the British Crown.

Whoever supposes that the idea of American independence, and the steps for securing that end were first devised by the patriots of the revolutionary period, makes a great mistake. The steps towards independence were many, and can be traced throughout our provincial history back into colonial times; but, during the existence of the Province charter they were firmly and openly made long before most of the heroes of the Revolution were born.

The organization of the legislature under the Province charter, which now consisted of two distinct bodies instead of one general assembly, as formerly, led, naturally, to the adoption of our present legislative system:—the governor having the power by that instrument to negative any bill which had passed the house and council in concurrence.

The rights and functions of these several branches, under the charter, were fruitful topics of discussion in the assembly and among the people, and many important points of our present constitutional law were developed by these discussions, which led, also, to the elucidation of and familiarity with parliamentary law and practice.

Some of these points were then explained, including the controversy respecting the right of the governor to negative the choice of a speaker of the House, and the

right of the House to adjourn itself without the governor's consent—which led to the explanatory charter of 1726—and the right of the legislature to fix the amount and the time of payment of the governor's salary, which the assembly succeeded in maintaining against the long-continued efforts of the Board of Trade and the Privy Council.

The interference of the Home government in the affairs of the province was next explained. By the terms of the charter all acts were to be sent to England for the Royal approval or disallowance, and under this provision the Home government claimed and exercised a power which, in the course of time, became intolerable to the people of the Province. Many suggestions and decisions of the Board of Trade and of the Privy Council were, nevertheless, wise; and to their interference we are indebted for much of the toleration that characterizes the later laws and manners of provincial times, as well as the defeat of some disastrous financial schemes, the checking of bigotry and superstitious tendencies, the rejection of some narrow and injurious commercial theories, and something of personal liberty.

The laws of the province being thus submitted to the Crown for rejection or approval received the attention of the best minds in England. As expounders of our constitutional rights under the charter, and as critics and guides of the legislation and political economy of this little community, such names as Lord Chancellor Somers, the father of the British Constitution, Locke, the philosopher, Joseph Addison, the English Atticus, and Matthew Prior, the poet, appear in the list with Lords Raymond, Hardwicke, Talbot and Mansfield, and the many other eminent lawyers, statesmen and scholars who supported the throne as its ministers of state for the eighty

years or more before the Revolution : so that this province was well prepared not only to be the cradle of Independence, but to act as the guide and tutor of the young Federal Republic, called into existence by the force of its example, and nurtured by its care.

It is true that the witchcraft folly, one of the darkest events in our history, occurred after the provincial government was established ; but this happened so soon after the old charter had been superseded, the actors in it having come to prominence under the old order of things, and being so wedded to the traditions of the past, that the whole delusion may with propriety be considered as the last terrible death-gasp of ancient superstition. One year later, and the repetition of such a tragedy had become impossible, and before that generation had passed away we find the people in church and legislature seeking to retrieve the injury done to the innocent victims of that mental epidemic.

A contrast was also drawn between the intolerance of the colonial government and the immunity from religious tyranny which the province charter guaranteed ; but which was not fully secured until after a severe struggle. The efforts of the Quakers to bring about toleration were then described, beginning with the resistance of the towns of Dartmouth and Tiverton to taxation for the support of another sect, and ending with the acts passed during Belcher's term, and suggested by him, for which the Friends were grateful. The address concluded with a rapid sketch of the events which ended in the Revolution.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 3. SALEM, MASS., DECEMBER, 1871. No. 12.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, DECEMBER 4, 1871.

President in the chair.

Records of preceding meeting read.

The Secretary read the following extract of a letter from Col. J. W. Foster, President of the Chicago Academy of Sciences.

November 15, 1871.

Our Academy meeting on Tuesday was well attended, and an earnest feeling was expressed by all to work more faithfully in the days of our adversity than in those of our prosperity. Mr. Walker on behalf of the Trustees made an informal statement as to our pecuniary condition. We have about \$60,000 to enable us to rebuild. He expressed a strong hope that the Academy would be able to secure a donation of an entire block near the lake shore whereon to erect a new building, and that before the expiration of two years, though he did not speak positively, the members might reassemble under their own roof. The action of the Essex Institute was prompt and generous, and was gratefully appreciated by us all.

Very truly, J. W. Foster.

The Secretary also announced the following correspondence:—

From Joshua Coit, Salem, Nov. 25; D. Dorchester, Salem, Dec. 1; J. C. Holmes, Detroit, Mich., Nov. 28; S. C. Jackson, Boston, Nov. 23, 25, Dec. 1; William Stimpson, Ilchester, Howard Co., Md., Nov. 13.

The LIBRARIAN reported the following additions:—

By Donation.

AUSTIN, COL. F. Characters of some new Hepatiae, 8vo pamph.

BOLLES, E. C. Catalogue of Officers and Students of Trinity College for 1871-72. Miscellaneous pamphlets, 9.

CLOGSTON, WM., of Springfield, Mass. Rochester Directories for 1857, '59, 1863-4, 1864-5, 1866-67, 1867-68. 6 vols. 8vo. Wheeling Directory, 1868-9. 1 vol. 8vo. Directory of South Norwalk for 1871. 1 vol. 8vo. Oswego and Fulton Directory, 1862-3. 1 vol. 8vo. Oswego County Directory, 1869-70. 1 vol. 8vo. Zanesville Directory. 1860, 1 vol. 8vo. Northern New York Business Directory, 1867-8. 1 vol. 8vo. Xenia City and Greene Co. Directory, 1870-1. 1 vol. 8vo. Ohio State Register, 1857. 1 vol. 8vo. Springfield, Ohio, Directory, 1868-9, 1 vol. 8vo. Columbus Directory, 1870-1. 1 vol. 8vo. Oneida County Directory, 1862-3. 1 vol. 12mo. Auburn Directory, 1863-4. 1 vol. 8vo. Utica City Directory, 1865-66. 1 vol. 12mo. Genesee Directory, 1869-70. 1 vol. 8vo. Chillicothe Directory, 1869-70. 1 vol. 8vo. Schenectady Directory, 1868-9. 1 vol. 8vo. Buffalo City Directory, 1869. 1 vol. 8vo. Columbus Directory. 1843-4. 1 vol. 12mo. Manchester Directories, 1846, 1848, 1852, 1856. 4 vols. 16mo. Nashua Directory, 1857-8. 1 vol. 16mo. Massachusetts State Directory, 1850-1. 1 vol. 16mo. Treble Almanac of Dublin, 1829. 1 vol. 12mo. Directory of Akron, Alliance, Cuyahoga Falls, Middlebury, etc., 1870-1, 1 vol. 8vo. Sermon preached in West Springfield, Mass., June 25, 1871, by Rev. S. E. Vermilye, D. D. 8vo pamph.

GREEN, S. A., of Boston. Catalogue of Monson Academy. 1871-2. 8vo pamph. Miscellaneous pamphlets, 13.

LEE, JOHN C. Commercial Bulletin for Nov. 1871.

NEAL, THEODORE A., of Boston. Boston Board of Trade, 1856, 1857, 1859, 1860, 1862, 1863, 1864. 7 vols. 8vo. Land Office Report for 1867. 1 vol. 8vo. Commercial Agency Register, 1868. 1 vol. 4to. Rules and Orders of the Senate. 1 vol. 8vo. Guide Books, 4. Almanacs, 3. Miscellaneous pamphlets, 27.

SMITH, CHARLES C. Services in memory of Rev. E. S. Gannett, D. D., Aug. 30, 1871. 8vo pamph.

WALLIS, MRS. JAMES A. Manuscript Journals kept by the late Asa Lamson, 11 vols. Interleaved Almanacs, 12.

By Exchange.

YALE COLLEGE LIBRARY. Catalogue of the Officers and Students in Yale College for 1871-72. 8vo pamph.

PUBLISHERS. Christian World. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailor's Magazine and Seaman's Friend. Shoe and Leather Journal. Silliman's Journal. Sotheran's Catalogue.

The following donations to the Historical Department were announced:—

KIMBALL, WILLIAM. View of Essex street from opposite the Market House to Washington street, painted by Joseph Cloutman about 1834.

SHEPARD, M. W. Two portraits in crayon of David Ropes and his wife of Salem. David Ropes, son of Benjamin and Hannah (Moses) Ropes, bapt. Apr. 14, 1739; variously styled "cooper," "trader," "gentleman," "innkeeper" and "merchant;" married, Oct. 9, 1760, Priscilla, dau. of Jonathan and Elizabeth (Sanders)

Webb; died Dec. 20, 1793. The widow long survived him, preserving in her last years a force of character and amiability which made her the object of constant and grateful attentions from a large circle of relations. She died Oct. 5, 1831, aged 91 years. (See Hist. Coll. of Essex Institute, vol. III, p. 125, and vol. VII, p. 162.)

Rev. E. S. ATWOOD occupied the hour of the meeting with an interesting and instructive communication on the "Beginnings and Growth of Language." It contained much curious and entertaining information and many valuable thoughts, and was listened to with great pleasure by a large audience.



REGULAR MEETING, MONDAY, DECEMBER 18, 1871.

The President in the chair.

Records of preceding meeting read.

The Secretary read the following letter from the Secretary of the Chicago Academy of Sciences:—

ILCHESTER, HOWARD CO., MD., Dec. 4, 1871.

DEAR SIR—The Chicago Academy of Sciences will hold a meeting on the 12th inst., at which time the Resolutions of the Essex Institute, communicated in your esteemed favor of the 17th of October, will be acted upon and the result reported to you by the recording secretary.

Allow me to add my personal thanks for the kind sympathy with us in our great misfortune, which the Institute has expressed through you, as well as for the offer of your publications to replace those lost.

Any of these publications which you can conveniently spare will be gratefully received. They may be sent to the care of Geo. C. Walker Esq., corner of Peck Court and Michigan Avenue, Chicago.

Very sincerely yours, WM. STIMPSON.

The following correspondence was also announced:—

From Albany Institute, Dec. 14; Bonn, Naturhistorische Verein, July 5; Bordeaux, Société Linnéene, July 12; Buffalo Historical Society, Dec. 8; Chicago Academy of Sciences, Dec. 4; Emden, Naturforschende Gesellschaft Sept. 22; Geological Survey of India, June 1; London Society of Antiquaries, Aug. 14; Luneburg, Naturwissenschaftliche Verein, Aug. 17; München, K. B., Akademie der Wissenschaften, Sept. 30; New York Historical Society, Dec. 4; New York Lyceum of Natural History, Dec. 4; Strasburg Library, Appeal for the Restoration

of, Nov.; Würzburg, Physicalisch-medicinische Gesellschaft, Aug. 11; H. M. Alden, New York, Dec. 6; Frank S. Sleeper, Galesburg, Mich., Dec. 7; E. M. Stone, Providence, R. I., Dec. 8.

The LIBRARIAN reported the following additions to the library:—

By Donation.

ALLEN, STEPHEN M. Standish Monument. Exercises at the Consecration at Duxbury, Aug. 17, 1871. 8vo pamph.

CHAPMAN, GEORGE R. Annual Report of the A. B. C. F. M., presented at the meeting in Salem, Oct. 3-6, 1871.

PRIEDEL GEO. H., of Charlestown, Mass. Notes of Early Ship-building in Massachusetts. 8vo pamph.

SCHAUFUSS L., of Dresden. Miscellaneous Catalogues, 12.

By Exchange.

ARCHIV FÜR ANTHROPOLOGIE IN BRAUNSCHWEIG. Heft. iv. Band iv.

BOTANISK TIDSSKRIFT I KJÖBENHAVN TIDSSKRIFT. Vol. iv, Tredje Heft, 1870.

CROSSE ET FISCHER. Journal de Conchyliologie. Tome 1. Nos. 1-2-3. Paris, 1871.

ENTOMOLOGISCHE ZEITUNG IN STETTIN. Herausgegeben von dem entomologischen Vereine zu Stettin. Jahrg. 31. Nos. 1-2, 1870. 1 vol., 8vo. Stettin, 1870.

GEOLOGICAL SURVEY OF INDIA. Memoirs of the, Vols. 1, II, III, IV, V, VI, and parts 1, 2, 3 of Vol. VII. Records of the, Vol. II, III, parts 1, 2, of Vol. IV. Cretaceous Cephalopoda and Cretaceous Gastropoda of Southern India. 2 vols. 4to. 1868. Catalogue of the Organic Remains belonging to the Cephalopoda and Echinodermata. 8vo pamph. Cretaceous Fauna of Southern India, Vol. III, Nos. 1-8. 4to pamph. Calcutta, 1870. Fossil Flora of Rajmahal Series. 6 nos. On Vertebrate Panchet Rocks, Bengal.

IOWA STATE HISTORICAL SOCIETY. The Annals of Iowa. Oct., 1871. 8vo pamph.

KONGELIGE DANSKE VIDENSKABERNES SELSKAB I KJÖBENHAVN. Oversigt, 1870, 1871. 2 pamphlets. 8vo.

LITERARY AND PHILOSOPHICAL SOCIETY OF LIVERPOOL. Proceedings, 1868-9, 1869-70. Vols. 23, 24. 2 vols. 8vo. Liverpool. 1869-70.

NATURFORSCHENDE GESELLSCHAFT IN EMDEN. Jahresbericht, 1870. 12mo pamph. 1871.

NATURHISTORISCHER VEREIN DER PREUSSISCHEN RHEINLANDE UND WESTPHALENS IN BONN. Verhandlungen. 27, Jahrg. Heft. 1, 2. 2 vols. 8vo. Bonn. 1870.

NATURWISSENSCHAFTLICHEN GESELLSCHAFT "ISIS" DRESDEN. Sitzungsberichte, Jan., Feb., März 1871. 8vo pamph. Dresden. 1871.

REALE ACCADEMIA DELLE SCIENZE IN BOLOGNA. Rendiconto, Anno Accademico. 1869-70, 1870-71. 2 pamphlets, 12mo. Universalità dei mezzi di previdenza, difesa, e sabbrezza per le Calamità degli Incendia. Opera Premiata in Concorso dalla Accademia delle Scienze dell' Instituto di Bologna. Scritter da Francesco del Giudice. Bologna, 1848. Royal 8vo. Della Instituzione de' Pompieri per grandi città e terre minori di qualunque stato; Libri Tre, né quali si tratta delle regole generali per fondare Compagnie di Soccoritori contro gl'incendi; si compendiano, esaminano e paragonano tra loro molti regolamenti oggi in vigore in Europa; e si propone una nuova forma di Statuto per quelli de essere dorunque

adatto. Opera Premiata in Concorso dalla Accademia delle Scienza dell' Instituto di Bologna e scritter dal Cavaliere Francesco del Giudice. Bologna, 1852. Royal 8vo.

SOCIETÀ REALE DI NAPOLI; ACCADEMIA DELLE SCIENZE FISICHE E MATEMATICHE. Atti dell' Accademia delle Scienze Fisiche e Matematiche. Vols. III, IV. Napoli, 1866-68-69. 4to pamph. Renediconto, Anno VI, VII, VIII, 1867-8-9. 4to pamph.

ST. GALLISCHE GESELLSCHAFT IN ST. GALLEN. Bericht. Vereins jahres, 1869-70. 1 vol. 8vo. St. Gallen, 1870.

VERMONT HISTORICAL SOCIETY. Vindication of Vol. I of the Collections from the "Attacks of the N. Y. Historical Magazine" by Hiland Hall. 8vo pamph. Montpelier, 1871.

ZOOLOGISCHE GESELLSCHAFT FRANKFURT A. M. Zoologische Garten. XII Jahrg. Nos. 1-6. Jan-June, 1871. 6 pamphlets, 8vo.

PUBLISHERS. American Literary Gazette. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Shoe and Leather Journal. The Academy.

The following donations to cabinets were reported.

A. B. C. F. M. Papers relating to N. A. Indian affairs formerly belonging to Mr. John Pickering of Salem. Signatures of the members of the Board attending the meeting held in Salem, Oct., 1871.

BOLLES, E. C. A picture of Brooklyn Orphan Asylum.

CONSTANT, C., of Smyrna. No. I. Moule antique trouvé sur la route entre Smyrna et Bondja. No. II. Tête cassée statuette antique trouvée dans l'île de Rhodes. No. III. Lampe on porte-lumière antique trouva dans l'île de Rhodes. No. IV. Petit vase on urne cineraira trouvi dans l'île de Rhodes.

NICHOLS, W. F., Cypress from Smyrna. Myrobalon from India. Unleavened Bread of the Armenians from Smyrna. Oak for tanning from Smyrna. A piece of Mosaic work from Pompeii. A piece of Lava from Smyrna. Views of Interno Cappella Palatina Palermo, Chiostro Mörreale, Messina dai Cappriccini.

RAYMOND, B. C., of Beverly. Pincers used by Major John Conant of Beverly, who flourished about one hundred years ago. He made the fisherman's heavy boots.

Mr. F. W. PUTNAM gave an account of the Mammoth Cave and its inhabitants, with special reference to the fishes of the cave and of other subterranean waters.* He called attention to the varied conditions under which fishes exist, and especially to the structure and position of the eye in different representatives of the class. He then compared the blind fishes of the Mammoth Cave with those of the Cuban Caves and with the blind catfishes

* Mr. Putnam's remarks will be given in detail in the *American Naturalist* for January, 1872, and will be illustrated by plates on which the various species of the family including the blindfishes of the Mammoth Cave will be represented.

belonging to different families, and described the species making up the family of Heteropygii, which contains the two species of blind fishes of the Mammoth Cave and two other species that have eyes. Giving a statement of the various theories relating to the non-development of eyes in the blind fishes of the cave, he asked why is it necessary to assume that because fishes are living in streams where there is little or no light; that it is the cause of the non-development of the eye and the development of other parts and organs? If this be the cause, how is it that the *Chologaster* from the well in Tennessee, or the "mud-fish" of the Mammoth Cave are found with eyes? Why should not the same cause make them blind if it made the *Amblyopsis* and *Typhlichthys* blind? Is not the fact, pointed out by Prof. Wyman, that the optic lobes are as well developed in *Amblyopsis* as in allied fishes with perfect eyes, and, I may add, as well developed as those of *Chologaster cornutus*, an argument in favor of the theory that the fishes were always blind and that they have not become so from the circumstances under which they exist? If the latter were the case and the fishes have become blind from the want of use of the eyes, why are not the optic lobes also atrophied, as is known to be the case when other animals lose their sight? I know that many will answer at once that *Amblyopsis* and *Typhlichthys* have gone on further in the development and retardation of the characters best adapting them to their subterranean life, and that *Chologaster* is a very interesting transitional form between the open water Cyprinodontes and the subterranean blindfishes. But is not this assumption answered by the fact that *Chologaster* has every character necessary to place it in the same family with *Amblyopsis* and *Typhlichthys*, while it is as distinctly and widely removed from the Cyprinodontes as are the two blind genera mentioned?

After reviewing the characters of the allied forms, he concluded his remarks as follows :—

From this brief comparison of some of the prominent characters of the genera of the Heteropygii with the Cyprinodontes, their acknowledged nearest allies, we can only trace what could be regarded as a transition, or an acceleration, or a retardation, of development, in simply those very characters, of eyes and ventral fins, that are in themselves of the smallest importance in the structure (permanence of character considered) of a fish, and, as if to show that they were of no importance in this connection, we find in the same cave, blind fishes with ventrals and without; and in the same subterranean stream, a blindfish and another species of the family with well developed eyes.

If it is by acceleration and retardation of characters that the Heteropygii have been developed from the Cyprinodontes, we have indeed a most startling and sudden change of the nervous system. In all fishes the fifth pair of nerves send branches to the various parts of the head, but in the blindfishes these branches are developed in a most wonderful manner, while their subdivisions take new courses and are brought *through* the skin, and their free ends become protected by fleshy papillæ, so as to answer, by their delicate sense of touch, for the absence of sight. At the same time the principle of retardation must have been at work and checked the development of the optic nerve and the eye, while acceleration has caused other portions of the head to grow and cover over the retarded eye.

Now, if this was the mode by which blindness was brought about and tactile sense substituted, why is it that we still have *Chologaster Agassizii* in the same waters, living under the same conditions, but with no signs of any such change in its senses of sight and touch? It may be

said that the *Chologaster* did not change because it probably had a chance to swim in open waters and therefore the eyes were of use and did not become atrophied. We can only answer, that if the *Chologaster* had a chance for open water, so did the *Typhlichthys* and yet that is blind.

If the *Heteropygii* have been developed from *Cyprinodontes*, how can we account for the whole intestinal canal becoming so singularly modified, and what is there in the difference of food or of life that would bring about the change in the intestine, stomach and pyloric appendages, existing between *Chologaster* and *Typhlichthys* in the same waters? To assume, that under the same conditions, one fish will change in all these parts and another remain intact, by the blind action of uncontrolled natural laws, is, to me, an assumption at variation with facts as I understand them.

Looking at the case from the standpoint which the facts force me to take, it seems to me far more in accordance with the laws of nature, as I interpret them, to go back to the time when the region now occupied by the subterranean streams, was a salt and brackish water estuary, inhabited by marine forms, including the brackish water forms of the *Cyprinodontes* and their allies (but not descendants) the *Heteropygii*. The families and genera having the characters they now exhibit, but most likely more numerous than now, as many probably became exterminated as the salt waters of the basin gradually became brackish and more limited, as the bottom of this basin was gradually elevated, and finally, as the waters became confined to still narrower limits and changed from salt to brackish and from brackish to fresh, only such species would continue as could survive the change, and they were of the minnow type represented by the *Hetero-*

pygii, and perhaps some other genera of brackish water forms that have not yet been discovered.

In support of this hypothesis we have one species of the family, *Chologaster cornutus*, now living in the ditches of the rice fields of South Carolina, under very similar conditions to those under which others of the family may have lived in long preceding geological times; and to prove that the development of the family was not brought about by the subterranean conditions under which some of the species now live, we have the one with eyes living with the one without, and the South Carolina species to show that a subterranean life is not essential to the development of the singular characters which the family possess.

That a salt or brackish water fish would be most likely to be the kind that would continue to exist in the subterranean streams, is probable from the fact that in all limestone formations caves are quite common, and would in most instances be occupied first with salt water and then brackish, and finally with fresh water so thoroughly impregnated with lime as to render it probable that brackish water species might easily adapt themselves to the change, while a pure fresh water species might not relish the solution of lime any more than the solution of salt, and we know how few fishes there are that can live for even an hour on being changed from fresh to salt, or salt to fresh, water. We have also the case of the Cuban blindfishes belonging to genera with their nearest representative in the family a marine form, and with the whole family of cods and their allies, to which group they belong, essentially marine. Further than this the catfish from the subterranean stream in Pennsylvania belongs to a family having many marine and brackish water representatives.

Thus I think that we have as good reasons for the belief in the immutability and early origin of the family of Het-

eropygii, as we have for their mutability and late development, and to one of my, perhaps, too deeply rooted ideas, a far more satisfactory theory; for, with our present knowledge, it is but theory on either side.

The following synopsis gives a summary of the characters of the family, genera and species.

HETEROPYGII TELLKAMPF, Müller's Arch. f. Anat., p. 392, 1844; and New York Journal of Medicine, v, p. 84, 1845.

Hypsæidæ Storer, Synopsis N. A. Fish, p. 435, 1846.

Brain of ordinary development in all its parts, similar to that of Cyprinodontes and of about the same proportions. Cerebral lobes larger than the nearly round optic lobes. Cerebellum overlapping the posterior third of the optic lobes. Medulla oblongata broad, with well defined right and left sides. (On comparing the brains of the three genera the only difference noticed was that in Chologaster the cerebellum was not quite as large proportionally, but more elongated and not quite as wide as in the other genera, while the optic lobes of this genus with well developed eyes were no larger than in a Typhlichthys of the same size.)

Skeleton not studied. Günther gives the vertebræ as thirteen abdominal and nineteen or twenty caudal. The bones of the head are thin and mostly flattened as in the Cyprinodontes. Occiput slightly convex.

Body compressed posteriorly. Head and anterior portion of body depressed, giving the form of a broad, flat head, with a compressed tail.

Branchiostegal rays six in number and but slightly covered by opercular bones; opercular opening large.

Fins. Dorsal and anal nearly opposite and posterior to centre of body. All the fins except the ventrals well developed, with central rays longest and first rays simple. Pectorals close to the head, about in the middle of the sides. (Ventrals present in Amblyopsis, absent in Typhlichthys and Chologaster.)

Mouth opening upwards, with lower jaw slightly projecting. Margin of the upper jaw formed by the intermaxillaries. Maxillaries placed behind the intermaxillaries, with lower third broad and below the intermaxillaries. Several rows of fine teeth on the intermaxillaries and lower jaw. (Teeth on palatines in Amblyopsis and Typhlichthys, none on these bones in adults of Chologaster.)

Scales. None on the head. Body closely covered with small, partially imbedded cycloid scales, irregularly arranged.

Lateral line absent.

Nostrils double. Anterior tubular and standing out from the end of the snout.

Stomach well defined, cœcal.

Pyloric appendages present.

Intestine with two turns.

Anus situated under the throat and forward of the pectorals.

Ovary single. (Placed by the side of the stomach in *Amblyopsis* and *Typhlichthys* and behind it in *Chologaster*.)

Viviparous. (*Amblyopsis*.)

Testes paired. (*Amblyopsis*.)

Air bladder with pneumatic duct. (*Amblyopsis*.)

Liver with the left lobe very large and partially enclosing the stomach.

Amblyopsis DEKAY, *Fishes of New York*, p. 187, 1842.

Eyes rudimentary and imbedded under the skin.

Head with numerous transverse and longitudinal rows of sensitive papillæ provided with nerve branches, many of the nerve branches terminating as free filaments outside the papillæ. Small granulations on the spaces between the papillary ridges. Canals under the skin.

Teeth minute, curved, and arranged in rows on the intermaxillary, inferior maxillary and palatine bones.

Body with a prominent papilla just over the opercular opening, at the base of a small papillary ridge similar to those on the head. Papillary ridges on sides of body of same character as those on the head, and arranged at nearly equal distances from opercular opening to base of caudal fin.

Pyloric appendages, one on each side.

Ovary situated on the right side of the stomach.

Fins. Ventrals small and placed near the anal fin. Dorsal, 9. Anal, 9. Pectoral, 11. Ventral, 4. Caudal, 24.

Amblyopsis spelæus DEKAY. LARGE BLINDFISH.

CRAIGIE, *Proc. Acad. Nat. Sci. Philad.*, i, p. 175, 1842. DEKAY, *Fishes N. Y.*, p. 187, 1842. WYMAN, *Amer. Jour. Sci.*, xlv, p. 94, 1843; *Ann. Mag. Nat. Hist.*, xii, p. 298., 1843. THOMPSON, *Ann. Mag. Nat. Hist.*, xiii, p. 111, 1844. TELLKAMPE, *Müller's Arch. f. Anat.*, p. 392, 1844; *N. Y. Jour. Medicine*, v, p. 84, with plate, giving three figs. of the fish; position of internal organs; brain; stomach; air bladder; scale (profile view gives the fish *without* ventral fins, but ventral view shows them), 1845. STORER, *Synopsis N. A. Fish*, p. 435, 1846. OWEN, *Lect. Comp. Anat. Fishes*, pp.

175, 202 (fig. of brain), 1846. WYMAN, *Proc. Boston Soc. Nat. Hist.*, iii, p. 349, 1850. "DALTON, N. Y. Medical Times. ii, p. 354, 18—" AGASSIZ, *Amer. Jour. Sci.* xi. p. 128, 1851. WYMAN, *Proc. Boston Soc. Nat. Hist.*, iv, p. 395 (1853), 1854; v, p. 18, 1854; *Amer. Jour. Sci.* xvii, p. 259, 1854 (with figs. of brain, eye, and otolite). GIRARD, *Proc. Nat. Sci. Philad.*, p. 63, 1859. POEY, *Mem. de Cuba*, ii, p. 104, Pls. 9, 11 (outlines of fish and of brain), 1858. WOOD, *Ill. Nat. Hist.*, iii, p. 314, figure, 1862. TENNEY, *Nat. Hist.*, p. 344, figure, 1865. GÜNTHER, *Cat. Fish Brit. Museum*, vii, p. 2, 1868. COPE, *Ann. Mag. Nat. Hist.*, viii, p. 368, 1871. PUTNAM, *Amer. Nat.*, vi, p. 6 et seq., with figs., Jan., 1872. WYMAN, *Mss. notes and drawings in Putnam, Amer. Nat.*, vi, p. 16 et seq., 1872. PUTNAM, *Amer. Nat.*, vi, p. 116, Feb., 1872 (additional note on the young).

PLATE 1 (*American Naturalist*, Vol. vi, Jan., 1872). FIG. 1. Brain, nerves and organ of hearing of *Amblyopsis spelæus*; enlarged; *a*, olfactory lobes and nerves; *b*, cerebral lobes; *c*, optic lobes; *d*, cerebellum; *e*, organ of hearing, showing the semicircular canals, with the otolite represented in place by the dotted lines; *f*, medulla oblongata; *g*, optic nerves and eye specks. FIG. 2. Otolite, enlarged. FIG. 3. Eye, magnified (natural size one-sixteenth of an inch in length); *a*, optic nerve; *b*, sclerotic membrane; *c*, layer of colorless cells; *d*, layer of pigment cells (iris?); *e*, lens. FIG. 4. Lens, enlarged and showing the cells. FIG. 5. Eye, enlarged, showing the muscular bands, *a, a, a, a*; *b*, the lens pressed out of place; *c*, the optic nerve. FIG. 6. Top of head, showing canals under the skin, natural size. The two black dots and lines indicate the eyes and optic nerves in position. FIG. 7. Top of head, showing the arrangement of the ridges of papillæ, nat. size. FIG. 8. One of the ridges of papillæ from the head, magnified. FIG. 9. Three of the papillæ from the ridge, still more magnified, showing the cup-shaped summit and projecting filament. FIG. 10. A portion of the ridge magnified, and treated with acid, to show the arrangement of the nervous plexus supplying the papillæ with nervous filaments from a branch (*a*) of the fifth pair. FIG. 11. Epithelial cells from the head. FIG. 12. Epithelial cells from the body.

PLATE 2. FIG. 1. Natural size; 1*a*, stomach and pyloric appendages, twice nat. size; 1*b*, scale, magnified (nat. size represented by the small outline on the left over the figure); 1*c*, abdominal cavity, showing position of stomach and single ovary, nat. size.

Head more than half as wide as it is long. Length of head, from tip of jaw to end of operculum, contained nearly twice in length of body from operculum to base of caudal fin.

Dorsal and anal fins of equal size, rounded, anal commences under third ray of dorsal.

Pectorals pointed, reaching to commencement of dorsal.

Ventrals pointed, nearly reaching to commencement of anal.

Caudal broad, long and pointed, membrane, enclosing simple rays above and below, continuing slightly on the tail.

Scales small, longer than broad, with quadrangular centre and from 8 to 12 concentric lines, which are broken and reduced in number anteriorly and crossed by numerous radiating furrows posteriorly.*

Colorless, or nearly so, with transparent fins.

* The scales described were in every instance taken from the 2d or 3d row under the dorsal fin.

Measurements. Largest specimen, 4·5 inches total length. Smallest specimen, 1·9 total length.

Geographical distribution. Subterranean streams in Kentucky and Indiana.

Specimens examined:—

PROF. WYMAN'S COLLECTION.

7 specimens. Half grown and adults. Mammoth Cave.

MUSEUM OF COMPARATIVE ZOOLOGY.

7 specimens. No. 778. Half grown and ♂ ♀ adults. Mammoth Cave.

1 specimen. No. —. Two-thirds grown. Cave near Lost River, Orange Co., Ind.

BOSTON SOCIETY OF NATURAL HISTORY.

2 specimens. No. 840. Half grown. Mammoth Cave.

PEABODY ACADEMY OF SCIENCE.

1 specimen. No. 520. Adult ♀. Mammoth Cave. Presented to Essex Institute in 1851 by N. Silsbee.

Other specimens. Dr. Günther mentions six specimens and a skeleton in the British Museum. Mr. Thompson, an adult and newly born young in the collection of the Natural History Society of Belfast. Dr. Steindachner has recently sent an adult and eight young to the Vienna Museum. The first specimen of which we have any record was presented to the Academy of Natural Sciences of Philadelphia; the second is the one described by DeKay and then in the Lyceum of Natural History of New York. Prof. Cope obtained three specimens from the waters of Wyandotte Cave in Indiana. Dr. Tellkamp had several specimens from the Mammoth Cave, and it is probable that specimens exist in nearly all the principal museums and in many private collections, as about all that have been caught in the Mammoth Cave for years have been sold by the guides to visitors.

Habits. But little is known of the habits of the large blindfish. Dr. Tellkamp states that they are solitary; on the slightest motion of the water they dart off a short distance, and that they are mostly found near stones or rocks on the bottom, and seldom come to the surface of the water. Prof. Cope states that if they are not alarmed they come to the surface to feed, swim in full sight, and can then be easily captured if perfect silence is preserved. He also thinks that they are principally surface feeders.

In the stomachs of several that I have opened the only remains found were those of Crayfish. In one specimen, opened by Dr. Wyman, a small fish with well developed eyes was found in the stomach. (See Amer. Nat., vi, p. 13, Pl. 1, fig. 13.)

The eggs are well developed in September, and the young are born about the middle to last of October. The young when born are half an inch or less in length, and are *without* external eyes. (See Amer. Nat., Feb., 1872. The young there mentioned may possibly be those of Typhlichthys.)

Typhlichthys GIRARD, *Proc. Acad. Nat. Sci. Philad.*, p. 63, 1859.

Eyes rudimentary and imbedded under the skin.

Head. The same arrangement of rows of sensitive papillæ as in *Amblyopsis*, and the spaces between the papillæ with granulations as in that genus. (The subcutaneous canals probably exist, but have not yet been made out.)

Teeth, as in *Amblyopsis*, on the maxillaries and palatines.

Body with papilla over opercular opening, and with the papillary ridges on the sides as in *Amblyopsis*.

Pyloric appendages one on each side as in *Amblyopsis*, but of slightly different proportion and shape. (Stomach not so pointed behind as in *Amblyopsis*.)

Ovary situated on right side of stomach, as in *Amblyopsis*. (Eggs fewer in number and proportionately larger than in *Amblyopsis*.)

Fins. Ventrals *absent*. Dorsal, 7 or 8; Anal, 7 or 8; Pectoral, 12; Caudal 24. (This formula is given after counting several specimens. Girard gives, D. 7; A. 8; P. 11; C. 23.)

It will be noticed that the only characters separating this genus from *Amblyopsis* are the *absence of ventral fins*, the shape of the stomach and pyloric appendages, and larger eggs in less number.

Typhlichthys subterraneus GIRARD. SMALL BLINDFISH.

GIRARD, *Proc. Acad. Nat. Sci. Philad.*, p. 63, 1859. GÜNTHER, *Cat. Fish Brit. Museum*, vii, p. 2, 1868 (as a syn. of *Amblyopsis*). PUTNAM, *Amer. Nat.*, vi, p. 20 et seq., with figs., Jan., 1872.

PLATE 2 (*Amer. Nat.*, Vol. vi., Jan., 1872). FIG. 3, slightly more than natural size; 3a, stomach and pyloric appendages, twice nat. size; 3b, scale, magnified (nat. size represented by small outline over the figure).

Proportions and general appearance, want of color, arrangement of papillary ridges, position and shape of fins as in *Amblyopsis spelæus*, with the exception that, owing to the jaws being more obtusely rounded, the head is slightly blunter and broader forward.

Membrane of caudal quite prominent and extending forwards to posterior base of dorsal and anal fins.

Scales broader than long. Large quadrangular centre with from 6 to 8 concentric lines reduced in number and broken up on anterior margin. Posterior portion with numerous radiating furrows.

Measurements. Largest specimen, 1.85 inches in total length. Smallest specimen, 1.45 inches in total length.

Geographical distribution. Subterranean streams in Kentucky, Tennessee and Alabama.

Specimens examined: —

MUSEUM OF COMPARATIVE ZOOLOGY.

7 specimens. No. 780. ♂ ♀. Adults. Mammoth Cave. Collected and presented by Alpheus Hyatt, Sept., 1859.

1 specimen. No. 781. Moulton, Alabama. Presented by Thomas Peters.

1 specimen. No. 782. Lebanon, Tennessee. Presented by J. M. Safford.

Other specimens. Dr. Girard described the species from a specimen in the Smithsonian Institution, taken from a well near Bowling Green, Ky. Dr. Günther mentions a specimen, in the British Museum, from the Mammoth Cave.

Habits. Nothing is known concerning the habits of this fish. It is evidently much rarer at the Mammoth Cave than the large species, to judge from the small number in collections. The fact that Mr. Hyatt obtained seven specimens when he was at the cave in September and did not get any of the other species, may indicate some peculiar location in the waters of the cave where it is more abundant than in other places. The eggs were fully developed in these specimens, but no embryos could be detected. The fish is probably viviparous, and very likely gives birth to its young in October.

Chologaster AGASSIZ, Amer. Jour. Sci., xvi, p. 135, 1853.

Eyes in normal position and well developed.

Head with small granulations on the surface of the skin. (No papillary ridges.)

Teeth minute, curved and arranged in rows on the intermaxillary and inferior maxillary bones. None on the palatines in the adults (Of the four specimens examined, the two larger (*C. cornutus*) are without palatine teeth, while the single specimen of *C. Agassizii*, which is evidently a young fish, has a few minute teeth on the palatine bones. In the smallest specimen of *C. cornutus* the mouth is abnormal, the intermaxillaries being reduced to a small central portion and there are consequently no teeth in the upper jaw, but the minute teeth on the palatines are present.*)

*I believe this is one of those interesting cases where one set of organs, or one portion of the animal structure, takes the place of another which from accident is wanting, and that in all probability these palatine teeth, that under normal conditions would be cast off as the fish attained maturity, would have continued to exist in this specimen and answer all the purposes of the intermaxillary teeth. But that in this accidental continuance of these palatine teeth, from the mere mechanical use forced upon them, we have the first stages of the development of a distinct genus, to be characterized by permanent teeth on the palatines, and reduced upper jaw bones, as many of the developmental school would argue, I do not think will bear the test of facts observed.

A not uncommon malformation of fishes consists in the entire or partial absence of the maxillary or intermaxillary bones. I have specially noticed this among our

(Body without opercular papilla and papillary ridges on the sides.)
Pyloric appendages two on each side. Stomach rounded and turned slightly on the side.

Ovary situated principally behind the stomach.

Fins. Ventrals *absent*. Dorsal, 8 or 9. Anal, 8 or 9. Pectoral, 12. Caudal, 28.

This genus principally differs from *Amblyopsis* and *Typhlichthys* by the presence of eyes, the absence of papillary ridges on the head and body, by having two pyloric appendages on each side instead of one, and by the posterior position of the ovary. It agrees with *Typhlichthys* in the absence of the ventrals, and the young further agree by the presence of palatine teeth.

***Chologaster cornutus* AGASSIZ.**

AGASSIZ, Amer. Jour. Sci., xvi, p. 135, 1853. GIRARD, Proc. Acad. Nat. Sci. Philad., p. 63, 1859. GÜNTHER, Cat. Fish. Brit. Museum, vii, p. 2, 1868. PUTNAM, Amer. Nat., vi, p. 21 et seq., with figs. Jan., 1872.

PLATE 2 (Amer. Nat., Vol. vi, Jan., 1872). FIG. 2. Natural size. 2a, stomach and pyloric appendages, twice nat. size. 2b, scale magnified (nat. size represented by small outline over the left of the fig). 2c, abdominal cavity showing stomach and single ovary behind the stomach, twice nat. size.

Head more than half as wide as it is long. Length of head, from tip of under jaw to end of operculum contained twice in length of body from operculum, to caudal fin. Width between the eyes equal to distance from eye to tip of under jaw.

Eyes of moderate size, situated just back and over the end of the maxillaries.

Dorsal and anal fins of nearly equal size, slightly rounded. Anal with slightly longer rays and commences under fourth ray of dorsal.

Pectoral fins pointed, reaching to line of commencement of dorsal.

Caudal fin pointed, about equal in length to the head. Membrane above and below extending but slightly on the tail.

Scales very small and deeply imbedded in the skin. Circular with small smooth space forward of the centre. From 15 to 20 concentric rings, cut by a few short radiating furrows on anterior, and longer and more numerous ones on posterior margin.

Intestine is a little longer than in an *Amblyopsis* of the same size.

common fresh water trout (*Salmo*) and marine conner or sea perch (*Ctenolabrus*) but there have never been recorded allied genera with these characters, while the malformed specimens are hardly numerous enough to give support to the theory that such malformations are hereditary, and it is probable that each case was caused by the non-development of the parts from special cause during embryonic life, or by accident to the individual.

The two pyloric appendages on the left side are close together and broader than the two on the right side, which are wider apart, longer and more slender than the others.

Color. Yellowish brown, much darker above, lighter on sides, and light yellow on under part and sides of head, belly and under part of tail. Three longitudinal very dark brown lines on each side: the upper commencing near the middle of top of head and following along the back to base of caudal fin; the middle one commencing at the nostril and passing through the eye to upper portion of operculum, thence about in the centre of side to about the centre of base of caudal fin; the lower commences under the pectoral fin and follows the ventral curve of the body to the base of caudal fin. All three lines are darkest and broadest forward, and terminate as a series of nearly confluent dots on the tail. Central rays of the caudal dark brown, outer rays uncolored. Dorsal, anal and pectorals not colored.

Measurements. The three specimens are respectively 1·5, 2, and 2·3 inches in total length.

Geographical distribution. South Carolina.

Specimens examined:—

MUSEUM OF COMPARATIVE ZOOLOGY.

3 specimens. No. 776. Rice Ditches at Waccamaw, S. C. Presented by P. C. J. Weston, 1853. (Orig. of Agassiz.)

Habits. Nothing is known concerning the habits of this species, the only specimens observed being the three mentioned. From the fact of its having a single ovary containing a small number (about 60) of large eggs it is probable that it is viviparous.

***Chologaster Agassizii* PUTNAM.**

PUTNAM, Amer. Nat., vi, p, 22 et seq., with figs. Jan., 1872.

PLATE 1 (Amer. Nat., Vol. vi, Jan., 1872). FIG. 4. Natural size; 4a, stomach and pyloric appendages, twice nat. size; 4b, scale magnified (nat. size shown by minute dot over left of the figure).

Head more than half as wide as it is long. Its length is contained three times in the length of the body from the operculum to the base of caudal fin.

Eyes proportionately large and placed over ends of maxillaries.

Dorsal and anal fins broken, but probably of about equal size. Anal fin commences about under fourth ray of dorsal.

Pectoral fins pointed and reaching about half way to the dorsal.

Caudal fin pointed, not quite as long as the head.

Scales very minute, longer than wide, with 4 or 5 concentric

lines round a granulated centre. A few radiating furrows cut the concentric lines on the posterior margin.

Pyloric appendages and stomach about the same as in *C. cornutus*.

Color. Uniform light brown, without markings except that the base of the caudal fin is rather darker than rest of fish. Fins uncolored.

Measurements. Total length, 1.4 inches.

Geographical distribution. Subterranean streams in Tennessee.

Specimen examined:—

MUSEUM OF COMPARATIVE ZOOLOGY.

1 specimen. No. 777. From a well in Lebanon, Tenn. Presented by J. M. Safford. Jan., 1854.

This species principally differs from *C. cornutus* by having a longer body and smaller head, by having the eyes proportionately larger, and by its coloration. Nothing is known of its habits except the fact of its subterranean life. The scales of the single specimen known indicate a young fish, and it is probably not over half grown.

The four species given in this synopsis are all of the family as yet known, but that others will be discovered and the range of the present known species extended is very probable. The ditches and small streams of the lowlands of our southern coast will undoubtedly be found to be the home of numerous individuals, and perhaps of new species and genera, while the subterranean streams of the central portion of our country most likely contain other species.

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BULLETIN

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VOL. 4.

SALEM, MASS., JANUARY, 1872.

No. 1.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, JANUARY 1st, 1872.

THE PRESIDENT in the chair. Records of preceding meeting read.

The President mentioned a few of the associations that cluster around this day ; a day when the mind naturally reverts to the past, recalls the incidents of the year now closed, and indulges in reveries upon their probable influence in the distant future. No one can foretell the results ; some of the most seemingly important will soon pass away and be forgotten, whereas the most apparently trivial, scarcely known beyond the threshold of the humble cot of the occurrence, will, as years roll on, become the centre of great interest and attraction, as the birthplace and home of some of nature's noblemen. He briefly alluded to the holidays that occur near the close of the old and the beginning of the new year, and called upon Mr. A. C. GOODELL, JR., who spoke of the estimation in which these days were held in the early period

of our colonial history, and the great change in the mode of observance within the past few years.

PURITAN HOLY DAYS.

Our forefathers, the Puritans, observed but three classes of holy days ; namely, Sabbaths, Fasts and Thanksgivings. In the observance of the first they differed from the Catholic church and from most of the Reformed churches by devoting them exclusively to religious exercises after the Mosaic model. It was on account of this difference between them and their neighboring Protestants in Holland, that the Pilgrims left that country for America. Here they enforced, by law, the strictest observance of the Lord's day, and established periodical fasts and days of thanksgiving.

The first thanksgiving in Massachusetts was observed at Salem, July 8, 1630. Winthrop and his immigrants had arrived about a month before, bringing provisions of which the settlers under Endicott stood greatly in need. Two days before the thanksgiving, Gov. Winthrop's son Henry was drowned in attempting to swim across the North river, after a canoe ; so that the occasion was mixed with sadness.

The next thanksgiving was observed at Boston, February 22, 1631. This was on account of the arrival of the ship *Lyon*, with provisions, which came the day before a fast which had been appointed on account of a threatened famine. The fast was immediately changed to a thanksgiving.

The next and first general thanksgiving was kept by the seven plantations then established, Oct. 16, 1633, and was ordered "in regard of the many and extraordinary mercies which the Lord hath been pleased to vouchsafe of late to this plantation ; namely, a plentiful har-

vest, ships safely arrived with persons of special use and quality," etc.

After the arrival of the Province charter, only one instance occurs of a day of thanksgiving set apart by act of the General Court. This was passed Nov. 13, 1693, and the day appointed was Dec. 21, O. S., corresponding to Jan., 2, of our present calendar. Since that time all thanksgiving days have been fixed by executive proclamation, and not by act of the legislature.

CHRISTMAS.

The next subject discussed was Christmas; which was at first a movable feast, celebrated, usually, in April or May. It was probably instituted in the second century, but was not fixed by the Catholic Church, upon Dec. 25, until the pontificate of Julius I., in the fourth century.

The tradition of the church is that the birth of Jesus occurred at midnight, whence the custom in England and some other countries of ringing the church bells at midnight, early dawn, and again in the morning.

The different methods of celebrating the day in different countries and ages were then explained. The revels of the Lord of Misrule commenced at All Hallow Eve (Oct. 31), and continued to Candlemas (Feb. 2). Every day after Christmas was a holiday until twelfth night (Jan. 6). The season was always considered propitious in England, a tradition made memorable by the words of Marcellus to Horatio in the first scene in Hamlet:—

"Some say that ever 'gainst that season comes
Wherein our Saviour's birth is celebrated,
The bird of dawning singeth all night long;
And then, they say, no spirit stirs abroad;
The nights are wholesome; then no planets strike,
No fairy takes, nor witch hath power to charm,
So hallowed and so gracious is the time."

The Puritans were greatly opposed to the observance

of the day, and in 1659 the following law was passed by the Colonial legislature of Massachusetts :—

“For preventing disorders arising in several places within this jurisdiction by reason of some still observing such festivals as were superstitiously kept in other countries, to the great dishonor of God and offence of others, it is therefore ordered by this Court and the authority thereof that whosoever shall be found observing any such day as Christmas or the like, either by forbearing of labour, feasting or any other way, upon any such accounts as aforesaid, every such person so offending shall pay for every such offence five shillings, as a fine to the county.”

This ordinance was objected to by the Royal Commissioners in 1665 ; but was not repealed until May 27, 1681.

In three years less than two centuries after the passage of this ordinance, the Legislature [1856, chap. 113], made this day a legal holiday on which even the sovereign legislature is not permitted to sit, and all government offices are closed.

NEW YEAR'S DAY.

New Year's day was then considered. The beginning of the year was very various in different ages and countries. Until the middle of the eighteenth century there were no less than seven days reckoned as this period ; viz.,—Jan. 1 (as now) ; Jan. 1 (one year in advance) ; Dec. 25 ; Easter ; March 1 ; March 25 (nine months sooner than the present time) and March 25 (three months later than the present time). This last, called the Florentine style or calendar, was the one in use in England and this colony until 1752, when it was changed to Jan. 1, and the Gregorian calendar adopted instead of the Julian which had been previously in use. The necessity of this change was then explained.

The Romans from whom we get the names of our months began the year with March, hence September, as its name implies, was really the seventh month, October the eighth, and so on.

An account was then given of the different ways in which New Year's day (Jan. 1) has been celebrated from the time of the Romans, when it was kept in honor of Janus, until the present time.

What the Romans had observed as a feast in honor of the double-faced deity, celebrating it by kindly salutations and the exchange of presents—each taking care during the continuance of the celebration, that all his words and acts should be pure and blameless—was turned by the church into a fast; and New Year's gifts were repeatedly forbidden under severe penalties. In England, however, the heathen practice of exchanging presents was never overcome by the Church; so strong a hold does it seem to have had in the popular sentiment. Indeed the custom seems to have been older, in Britain, than the time of the Roman invasion. About the only public celebration of New Year's in England at this day is the ringing in of the new year and ringing out of the old.

The present year is memorable as the first year in which the heads of departments at Washington, and many other prominent men following their example, have resolved to furnish no intoxicating drinks to those who, in observance of the time honored custom of New York, celebrate the day by making calls upon the ladies of their households.

INJURIOUS INSECTS IN ESSEX COUNTY.

Dr. A. S. PACKARD spoke of several species of insects injurious to vegetation noticed during the past season in this vicinity—specifying among others

THE ONION THRIPS.

About the middle of August my attention was called by Mr. B. P. Ware of Swampscott to serious losses of his onions from the attacks of a minute insect. The leaves were observed to turn suddenly yellow and to wilt, and the plant die. In this way large patches became infested and turned yellow, until in two or three days these prolific insects spread over the whole field. They seemed to increase most rapidly during the unusually dry hot weather that we experienced about the middle of last August. On the 11th of August a whole acre was thus cut off. Mr. Ware informed me that onion plants have been more or less infested in this way for some fifteen years, but the damage done this year was greater than ever before. This evil seems wide spread in Essex County, as not in Swampscott alone, but in Lynn, Salem and parts of Danvers, the onion crop had been similarly infested. About \$100,000 worth of onions are raised in Essex County alone, and Mr. Ware judged that at least a tenth part was destroyed by this new pest, so that in one county alone and from one kind of injurious insect we have in one season lost \$10,000. The onion crop is next to the hay crop in value, as it is sold for cash.

On examining the specimens brought into the Museum of the Peabody Academy of Science, the leaves were found to be covered with hundreds of a minute thrips which by gnawing the surface of the leaves had caused them to turn white in spots, and subsequently yellow; where they were most numerous the outer skin of the fleshy leaves was entirely eaten off, and though it was difficult to imagine that so minute an insect could have

Fig. 1.

*Limothrips tritici* (fem.).

caused the death of so stout and thick-leaved a plant, yet here were hundreds of the culprits in all stages of growth plying their jaws before our eyes in proof.

This insect, which occurred in both sexes and in all stages of growth from larvæ of minute size proved to be the wheat thrips (*Limothrips tritici*) of Fitch who gives an account of its appearance and habits in his "Second Report on the Noxious Insects of New York," p. 304.

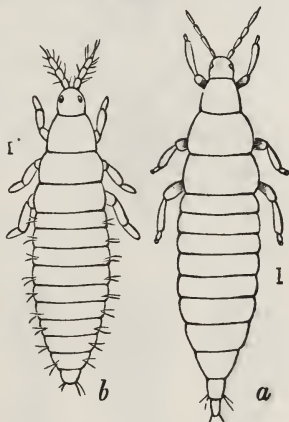
Through the kindness of C. L.

Flint, Esq., of the Mass. State Board of Agriculture, we are enabled to present figures of these insects taken from Dr. Packard's Report to the Board as State Entomologist. The females alone are winged, the males being wingless and closely resembling the larvæ. The body of the female (Fig. 1) is smooth and shining, uniformly greenish yellow with no other markings; the legs are a little paler towards articulations. The larva

(Fig. 2, *b*) is entirely greenish-yellow, the head and prothorax of

the same color as the rest of the body. The male (Fig. 2, *a*) differs from the larva in having 2-jointed feet (tarsi) and 7-jointed antennæ, those of the larva being 4-jointed. The small line at the side of each figure indicates the natural size of the insect.

Fig. 2.



Larva and male of *Limothrips tritici*.



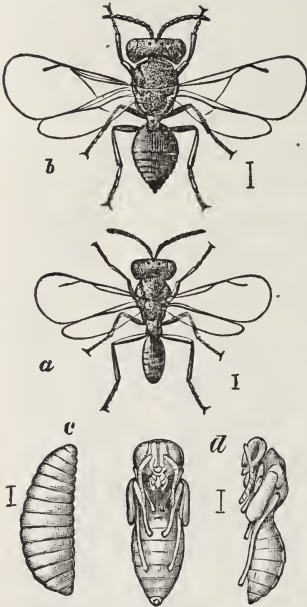
End of antennæ of male.

THE ONION FLY.

which in its larval condition attacks the roots of the

onion, was briefly alluded to. It appears about the middle of May and continues its ravages until nearly the third week in August, when it changes into the pupa or chrysalis state.

Fig. 3.



Parasite of the Imported Cabbage
Butterfly.

IMPORTED CABBAGE CATERPILLAR AND ITS PARASITE.

was next mentioned. This caterpillar during the past summer has been fearfully abundant in gardens in this vicinity, and would have done still greater injury to the growing crops were it not for the presence of the parasite which had been found to prey upon it very extensively.

The figures annexed illustrate the several stages (Fig. 3, *a*, male; *b*, female; *c*, larva; *d*, pupa) of this invaluable ichneumon parasite which is one of the Chalcid family, and is the *Pteropis puparum* of Linnæus.

Dr. Packard had supposed that this parasite had perhaps been imported with its host, but it is now found to be a native of this country as well as of Europe, and cited authorities confirmatory of this assertion.

LARVA OF TACHINA.

Another parasite which he mentioned was the larva of a parasitic fly, Tachina (Fig. 4, enlarged three times), the adult form of which closely resembles the common house fly. It is a flattened,

Fig. 4.



Larva of Tachina.

cylindrical maggot, both ends of the body rounded much alike.

Mr. PUTNAM remarked that he had collected several hundred of the caterpillars and pupæ of the cabbage butterfly during the month of September, the caterpillars having crawled up the side of his house from an adjoining field where a large number of cabbages had been entirely destroyed by them. He had noticed that a very large number of the pupæ were infested by parasites, many of which came out during the month of September and in October. The butterfly will be out early in the spring.

Discussion followed on these and kindred subjects, participated in by Messrs. Packard, Putnam, Bolles, Goodell and the chair.

William Gardner Barton of Salem and Beaman Gates of Beverly were elected members.

The LIBRARIAN reported the following additions :—

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GREEN S. A., of Boston. Miscellaneous pamphlets, 24.

HINGHAM AGRICULTURAL AND HORTICULTURAL SOCIETY. Transactions for 1871. 8vo pamph. 1872.

HOLDEN, N. J. Wells' English Grammar, 1 vol. 12mo. The Commonwealth, 245 nos. The Liberator, 171 nos. National Anti-slavery Standard, 256 nos. Lynn News, 25 nos. Saturday Night Press, 10 nos. Miscellaneous pamphlets, 50. Miscellaneous serials, 10.

HOLMES, JOHN C., of Detroit, Mich. Michigan School Report for 1870. 1 vol. 8vo. Lansing, 1870.

LEE, GEO. C. New York City Directories, 1858, 1860, 1861, 1862, 1863, 1866, 1867, 1868, 1869, 1870. 6 vols. 8vo. Boston Directories, 1858, 1860, 1861, 1862, 1863, 1866, 1867, 1868, 1869, 1870. 10 vols. 8vo. Bankers' Magazine, Vols. II, III, 1847-8, 1848-9. 2 vols. 8vo. Boston Board of Trade, 1865, 1868. 2 vols. 8vo. Water Power of Maine. 1 vol. 8vo. Report of the Commissioners of Patents for 1851. 1 vol. 8vo. Commercial Relations of U. S., Vols. I, II. 2 vols. 4to. Washington, 1856-1857.

LEE, JOHN C. Commercial Bulletin for Dec., 1871.

VINTON, JOHN A. Giles' Memorial. 1 vol. 8vo. Boston. 1864.

WILDER, MARSHALL P., of Boston. Historical Address before the Massachusetts Agricultural College, July 19, 1871. 8vo pamph.

WILLIAMS, HENRY L. The National Eagle, 1870. 8 nos. Miscellaneous pamphlets, 6.

By Exchange.

ACADÉMIE IMPÉRIALE DES SCIENCES BELLES LETTRES ET ARTS IN BORDEAUX. Actes. 3e Série. 31e Année. 1869. 8vo. Paris. 1869.

KÖNIGLICH BAYERISCHEN AKADEMIE DER WISSENSCHAFTEN ZU MÜNCHEN. Sitzungsberichte der philosophisch-philologischen und historischen Classe, 1871. Heft I, II, III. 8vo pamphlets. München, 1871. Sitzungsberichte der mathematisch-physikalischen Classe, 1871. Heft I, II, III. 8vo pamph. München. 1871. Die Aufgabe des chemischen Unterrichts gegenüber der Anforderungen der Wissenschaft und Technik. Rede gehalten in der öffentlichen Sitzung der k. Akademie der Wissenschaften am 25, Juli, 1871, von Dr. Emil Erlenmeyer. 4to pamph. München. 1871.

MASSACHUSETTS HISTORICAL SOCIETY. Collections, Vol. x. Fourth Series. 1 vol. 8vo. Boston, 1871.

SOCIEDAD DE NATURALISTAS NES-GRANADINOS. Exploracion entre San José De Iúcuta I el Rio Magdalena, 8vo pamph. Bogota, 1871. Informe de los Exploradores del Territorio De San Martin. 8vo pamph. Bogota, 1871. Catálogo del Estado S. De Antisquia, 8vo. pamph. Bogota, 1871.

SOCIÉTÉ IMPÉRIALE DES SCIENCES NATURELLES DE CHERBOURG. Memoires, Tome xv, 1870. 8vo pamph. Cherbourg, 1870. Catalogue de la Bibliothèque, 8vo pamph. Cherbourg, 1871.

PUBLISHERS. American Naturalist. Christian World. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer. Shoe and Leather Journal. Silliman's Journal.



REGULAR MEETING, MONDAY, JANUARY 15th, 1872.

THE President in the chair. Records of preceding meeting read.

A TRIP TO CALIFORNIA BY RAIL.

J. J. H. GREGORY, Esq., of Marblehead gave a familiar talk upon California, and the things to be seen along the route of the Pacific railroad, beginning at Omaha. His descriptions were plain, graphic and interesting. Speaking of agriculture in Utah, he said the process of irrigation as carried on there was far less costly than he had supposed, as it consisted of the making of mere furrows with the plough. He spoke of the elements of dissolu-

tion in the Mormon system of polygamy, the principal one of which was the great influx of gentiles, though dissension in the church itself was doing much to undermine the system. Rents in Salt Lake City he described as "terrific," and the term was not too strong, judging from a single instance which he named, where the keeper of a rum shop paid seven thousand, two hundred dollars in rent and liquor tax for his room of thirty feet by eleven—about half the amount being for rent.

The Rocky Mountain slopes, the general scenery, the many miles of grain fields, and the agriculture of California, were described.

Oleanders were seen eighteen feet in height, Century plants thirty and forty feet. In Sacramento these bloom when fifteen years old. He also described the fruits, strawberries being sold at twenty-five cents for three quarts. Of the California wines he had a poor opinion so far as his observation extended, and judging by his own standard of taste.

Mr. Gregory will continue his remarks at the next meeting.

The LIBRARIAN mentioned the following additions:—

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- BOLLES, E. C. Miscellaneous pamphlets, 19.
 COLE, Mrs. N. D. Salem Gazette for 1871.
 FOOTE, CALEB. Files of several county papers for Oct., Nov., Dec., 1871.
 NATIONAL ASSOCIATION OF WOOL MANUFACTURERS. Bulletin for Oct., 1871.
 PALFREY, C. W. Miscellaneous pamphlets, 33.
 POORE, BENJ. P., of Washington, D. C. Washington and Georgetown Directories for 1865, 6, 7, 8. 4 vols. 8vo.
 U. S. A. CHIEF OF ENGINEERS. Report on Geological Exploration of the 40th Parallel, Vol. V, Botany. 1 vol. 4to. Washington, 1871.

By Exchange.

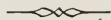
- ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. Proceedings of. Part II. April-Sept., 1871. 8vo pamph.

BOSTON NUMISMATIC SOCIETY. American Journal of Numismatics for Jan. 1872. 8vo pamph.

HISTORICAL SOCIETY OF DELAWARE. Catalogue of, with its History, Constitution and By-laws. 8vo. pamph.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Register and Antiquarian Journal of Jan., 1872. 8vo pamph.

PUBLISHERS. American Literary Gazette. Gloucester Telegraph. Haverhill Gazette. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quarritch's Catalogue. Sailors' Magazine and Seamen's Friend. Salem Observer. Shoe and Leather Journal.



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DEFICIENCIES IN DIRECTORIES.

[Continued from volume iii, page 96.]

WASHINGTON, D. C., by E. A. Cohen [1834]; by A. Reintrel [1843]; by Gaither & Addison [1846]; by E. Waite [1850]; by A. Hunter [1853]; by I. Ten Eyck [1855]; by W. H. Boyd [1858, 1860]; by T. Hutchinson & Bro. [1863]; by A. Boyd [1864, 1865, 1866]; by W. H. Boyd [1867, 1868, 1869, 1870].

SOUTHERN CITIES, by John P. Campbell [1854]; by W. R. Dunkley [1866-67].

VIRGINIA Directory and Business Register, by Elliott & Nye [1852].

RICHMOND, VA., by John Maddox [1819]; by E. Fuslew [1860]; by Mills & Starke [1866].

WHEELING, WEST VA., by Williams & Co. [1867-8, 1868-9].

CHARLESTON, S. C., by J. H. Bagget [1852].

AUGUSTA, GA., by E. H. Paghe [1867].

SAVANNAH, GA., by Purse & Son [1866].

MOBILE, ALA., by Fawn & Dennett [1861, 1866].

JACKSON, MISS., by J. L. Power [1860].

NEW ORLEANS, LA., by Cohen [1849]; by R. C. Kerr [1856]; by C. Gardner [1859].

TENNESSEE STATE Gazetteer and Directory, by J. L. Mitchell [1860].

MEMPHIS, TENN., by Tanner, Halpin & Co. [1859]; by Williams [1860].

NASHVILLE, TENN., by J. P. Campbell [1853, 1855-6, 1857, 1859]; by E. D. King, [1865, 1866, 1867, 1868, 1869].

LOUISVILLE, KY., by G. Collins [1836].

LAKE SHORE Gazetteer and Business Directory [1861-62].

C. C. C. & I. R. R. Gazetteer by Hynes Bro. [1870-1].

AKRON, ALLIANCE, CUYAHOGA FALLS, MIDDLEBURY, KENT, CANTON, RAVENNA, MASSILLON, SALEM, WOOSTER, OHIO, by Wiggins & Weaver [1870-1].

CHILLICOTHE OHIO, by J. B. Doyle [1855-6]; by Williams & Co. [1869-70].

COLUMBUS, OHIO, by J. R. Armstrong [1843-4, 1855]; by Williams & Co. [1867-8, 1869-70].

CINCINNATI, OHIO, by C. S. Williams [1848-9, 1850, 1852]; by Robinson & Jones [1846]; by D. F. Shaffer [1849]; by C. S. Williams [1849-50, 1850-1, 1851-2, 1853, 1855, 1856, 1861, 1859, 1867, 1858, 1866].

DAYTON, OHIO, by C. S. Williams [1860-1].

SANDUSKY, OHIO, by W. D. Root [1855].

SPRINGFIELD, OHIO, by Williams & Co. [1868-9].

STEUBENVILLE, WELLSVILLE, EAST LIVERPOOL, and WELLSBURGH, OHIO, by Wiggins & Weaver [1870-1].

STEUBENVILLE, OHIO, by C. S. Williams [1856].

TOLEDO, OHIO, by C. S. Williams [1860]; by Scott [1866, 1867].

XENIA, OHIO, by Williams & Co. [1870-1].

ZANESVILLE, OHIO, by C. S. Williams [1860-1].

WESTERN RESERVE Register, by Sawyer, Ingersoll & Co. [1852].

DETROIT, MICH., by Duncklee, Wales & Co. [1850]; by C. F. Clark [1865-6].

INDIANA, STATE. State Gazetteer and Business Directory by G. W. Hawes & Co. [1852-3]. State Gazetteer and Shipper's Guide, by M. V. B. Cowen [1866-7].

INDIANAPOLIS, Ind., by R. Edwards [1865-6, 1867]; by Logan [1867-8]; by H. N. McEvoy [1858-9]; by Hawes & Co. [1865] by R. Edwards [1866]; by Logan [1868]; by R. Edwards [1869]; by Hutchinson [1870].

ILLINOIS STATE Business Directory, by Smith & Du Moulin [1860]; Northern Counties, by E. H. Hall [1855-6]; State Gazetteer and Business Directory, by G. W. Hawes [1858-9].

ILLINOIS AND MISSOURI State Directory by W. L. Montague [1854-5]. Central Directory by James P. Crawford [1869].

CHICAGO, ILLINOIS, by O. P. Hatheway & J. H. Taylor [1849-50]; by E. H. Hall [1855-6]; by John Gager [1857]; by Tanner, Halpin & Co. [1858]; by R. V. Kennedy [1859-60]; by T. M. Halpin & Co. [1860-1]; by Smith & Du Moulin [1860]; by T. M. Halpin [1861-2, 1862-3, 1863-4, 1864-5, 1865-6] by J. T. Hair [1865-6]; by R. Edwards [1867]; by Smith & Du Moulin [1859]; by W. S. Spencer [1864-5]; by W. F. Bartlett [1857-8]; by R. Edwards [1869].

GALESBURG, ILLINOIS, by O. E. Root [1861].

WILL COUNTY, ILLINOIS, by J. C. W. Bailey [1859].

PUBLICATIONS OF THE ESSEX INSTITUTE. 1872.

JOURNAL OF THE ESSEX COUNTY NATURAL HISTORY SOCIETY. 1 vol.

8vo. 1836-1852. pp. 135. In paper,	\$0 50
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NATURALISTS' DIRECTORY. Issued with Proceedings, Vol. V, 1867. . . .

[This work contains the addresses and departments of study of the Naturalists, Collectors and Taxidermists, in North America at the date of publication.]

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THE WEAL-REAF. Published for Institute fair in 1860. Small 4to. pp. 56, 30

TO-DAY. Published for the Institute and Oratorio fair, 1870. pp. 38, . . 50

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BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4. SALEM, MASS., FEBRUARY, 1872. No. 2.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, FEBRUARY 5TH, 1872.

THE President in the chair. Records of preceding meeting read.

CONTINUATION OF MR. GREGORY'S REMARKS ON CALIFORNIA.

J. J. H. GREGORY of Marblehead continued his remarks on his journey to California. He commenced with his visit among the Mormons at Salt Lake City, and described them as a temperate, industrious, thriving and religious community. Their leader appeared to be a man of rare sense and judgment. He briefly commented on the nature of the country lying between the Mormon community and San Francisco, and gave a very interesting account of his visit to the latter city and of what he saw therein. The Sabbath, by a large portion of the business people, was observed as other days. No paper money is used. Gold and silver only are circulated, and nothing less than ten cents is known.

He referred to the Chinese as a neat and orderly class of people, and more susceptible to moral and religious

influences than many supposed. They are first met at Ogden, and at San Francisco occupy exclusively one or more streets. They have their own amusements, including theatre, etc.; a visit in their midst, gives one, for a time, the impression that he is in China.

He noticed the mining towns many of which are nearly forsaken; the mining regions, and showed how by the process of mining, the soil was forever rendered useless for tillage; and the parks of big trees, of the latter many figures were given to show their size. Some of these trees are covered with bark thirty-two inches in thickness, while others, of enormous proportions otherwise, run up one hundred and twenty-four feet without losing more than a single foot in diameter. In his estimation most of the trees were not less than ten, eleven, or twelve hundred years old.

The beautiful and romantic scenery of the Yo-semite valley, which was also visited, he described in a very graphic and interesting manner.

FLORIDA INDIANS.

The following extract of a letter from Mary R. Kimball, of Salem, a teacher among the freedmen, dated Apalachicola, Fla., Dec. 25th, 1871, was read:—

APALACHICOLA, December 25, 1871.

I have been trying to get some information as to the Indian Mounds in this vicinity. One of the oldest of the "freed people" came in to see me, and said, "I am the oldest man in this place."

"Well" said I, "you are just the man I want to talk with. What do you know about those Indian mounds? Did they live there, or did they bury in those heaps?" "No" he said, "I have talked with some of the chiefs, and they told me that they were thrown up for defence; you will find them about every mile for a long distance. If you could find their graves, you would find buried with them a bowl of something to eat, with a spoon at their head, and a rifle at their side, as they were going to better hunting-grounds than we had here." "Why"

I asked, "are there so many conch shells around these places?" "They ate them as we do oysters; why, out in the woods there was a pile twenty feet high, but they have hauled many of them away to build up the roads. The different tribes and the Spanish would fight, and if you will go down to where the Flint and Chattahooche rivers fork and enter the woods, you will discover these mounds thrown up and will find skulls perforated by bullets; I have found them myself."

One of the colored men found an earthen jar last fall. He thought there was money in it, but finding none he left it in disgust. He said it would hold about two gallons.

I am going to get some one to direct me to these places when I can leave, and I will do all that I can to examine them.

The SECRETARY announced the following correspondence:—

From the Buffalo Historical Society, Jan. 22; a circular of the Chicago Academy of Sciences, an account of the loss of its building, collections, library, etc., in the great fire of Oct. 9, 1871; Maine Historical Society, Jan.; New England Historic-Genealogical Society, Jan. 22; New York Historical Society, Jan. 22; F. D. W. French, Boston, Feb. 3; Charles B. Moore, New York, Jan. 30; Feb. 1; S. A. Nelson, Georgetown, Jan. 16, 23; James Riker, Waverly, N. Y., Jan. 16.

The LIBRARIAN reported the following additions:—

By Donation.

BOLLES, E. C. Portland Directory for 1869. 1 vol. 8vo.

BROOKS, Mrs. H. M. Woman's Journal for 1871.

BUTLER, B. F., M. C. Conkling's Speech in U. S. Senate, Jan. 11, 1872. Report of the Department of Agriculture for Jan., 1872.

FREKE HENRY. The Dependence of Life on Decomposition, by H. Freke. 8vo pamph. Dublin, 1871.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 4.

LANGWORTHY, I. P. Catalogues of Mt. Holyoke Female Seminary for 1838-9, 1850-1, 1856-7.

PERKINS, JONATHAN C. Catalogue of Amherst College, 1871-2. Exercises at the Semi-centennial of Amherst College, July 12, 1871.

RHODE ISLAND SOCIETY FOR THE ENCOURAGEMENT OF DOMESTIC INDUSTRY. Transactions of 1855, 6, 7, 8, 9, 60, 1, 2, 3, 4, 5, 6, 7, 8, 9, 70. 16 pamphlets. 8vo.

ROBINSON, JOHN. Railway Times. 150 nos. Miscellaneous pamphlets, 50.

ROPES, WM. L., of Andover. Catalogue of Andover Theological Seminary, 1871-72.

ST. JOHN & COFFIN of New York. The Cabin Book; or National Characteristics by Chas. Sealsfield. 1 vol. 12mo.

SUMNER, CHAS., U. S. Sen. Land Office Report for 1869. 1 vol. 8vo. Washington, 1870.

By Exchange.

BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences physiques et naturelles, Dec. 15, 1871. No. 168. 8vo. pamph. Genève. 1871.

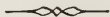
HARVARD COLLEGE LIBRARY. Report of the President and Treasurer of Harvard College, 1870-71.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. Seventh Annual Catalogue of the Officers and Students, 1871-2. Boston, 1872.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Proceedings of, at the Annual Meeting, Jan. 3, 1872.

PUBLISHERS. American Chemist. American Journal of Science. American Literary Gazette. American Naturalist. Christian Register. Christian World. Essex County Mercury. Fireside Favorite. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Nation. Nature. Peabody Press. Salem Observer. Shoe and Leather Journal.

Horatio C. Merriam of Salem, elected a resident member.



REGULAR MEETING, MONDAY, FEBRUARY 19, 1872.

President in the chair. Records of preceding meeting read.

PASSION PLAY AT OBER-AMMERGAU.

JUDGE JOHN P. PUTNAM of the Superior Court read a very interesting paper descriptive of the performance of the "Passion Play" at Ober-ammergau, which he witnessed in 1871. The audience listened with marked attention, and the Judge's description was exceedingly graphic and curious.

Ober-ammergau is a secluded village in the highlands of Bavaria, and presents, as it is gradually approached, a very picturesque appearance, nestled in a plain of green fields, with snow-capped mountains in the background, a cluster of quaint looking cottages, built of stone covered with plaster, having the low broad Swiss roof, and each with its little garden of vegetables and rose trees. In the centre is the church, an object of veneration, love and tender care, as the exquisite neatness of the interior, and

of the exterior with its surroundings, amply testify. The inhabitants, numbering some twelve hundred, are peasants and with few exceptions, carvers in wood, an occupation which tends to raise them above the ordinary farmer.

Many of their carvings are really art works and bear marks of careful study. An atmosphere of general peace and good will seems to pervade the place, the villagers pursue the even tenor of their ways, making their faith their life, and cultivating those traits of character so essential to the performance of this duty in fulfilment of a vow made during a terrible pestilence in 1633.

When the pestilence was at its height, the poor peasants vowed to God, that, if He would stay the plague, they would perform every ten years, in token of their deep gratitude, this sacred drama representing the character of Christ from His entrance into Jerusalem to His ascension; this has religiously been continued with scarcely an omission every ten years to the present time.

The Judge then gave a brief outline of the history of the sacred drama; a history which exhibits very clearly the gradual development of Christianity out of the forms and customs of Paganism, in the early period of the Church. Under the papacy of Gregory the Great the germs of the true mystery plays are found; the Church then began to commemorate by processions with choruses, chants and dialogues, scenes of the passions and of the resurrection of the Saviour, and the various events of His life. He spoke of the popularity of these plays, in England, in the middle of the fourteenth century, and their continuance to a later period in Germany, Spain and Italy and to their final interdiction, generally, at the close of the last century.

The performance of these plays has been several times prohibited; the villagers of Ober-ammergau have however

always succeeded in obtaining a dispensation in their favor. The time for its last performance was 1870, but the breaking out of the war between France and Prussia compelled its postponement to the next year. To illustrate its hold on the hearts of the people, Judge Putnam stated that the villager who personated Christ was drafted into the army, but he was permitted to wear his long hair, and so careful were the authorities and soldiers for his safety, that he was never placed in an exposed position, but was confined to garrison duty.

The account of the performance was minute and impressive. The stage occupies about twenty thousand square feet, with a fine opportunity for grand scenic effects. The performers number in all about six hundred; and although the services commenced at 8 A. M., and lasted eight or nine hours, there was nothing from beginning to end calculated to excite anything but feelings of profound emotion and reverence. Some of the spectacles were of exceeding beauty. The music was solemn and inspiring. It is not allowed to be written and no one is permitted to commit a note to pencil and paper. Two years previous to the performance the principal characters are selected, and the individual representing Christ must allow his hair to grow that length of time, also those who represent Joseph of Arimathea and many of the disciples. On the January preceding, the rehearsals commence and continue several times a week.

The theatre is capable of seating some five or six thousand people, and entirely uncovered excepting the first and second row of boxes. The play is given on every Sunday and festival day from May to September inclusive, upwards of twenty times in all, so that during the course of the summer one hundred thousand persons can see it. Everybody seems to be inspired with the occasion—the peasants

of the neighboring villages, the great and fashionable world, and the ordinary tourist, were all there, as well as the Catholic Priest, the Anglican minister, and the Protestant dissenting minister, thus showing sympathy and favor.

We shall not attempt a report of Judge Putnam's description; it must be listened to in order to be properly appreciated. He described the opening chorus, the tableaux which precede and illustrate each act, the great taste and discipline which pervade the performance, and each of the eighteen or twenty acts in detail, beginning with the triumphal entrance of our Lord into Jerusalem at the rising of the curtain, and continuing through the High Priests in council; the departure of Jesus from Bethany, and the taking leave of his mother; the last supper; the betrayal and the kiss; Jesus before Caiaphas; despair of Judas; Christ before Pilate; the scourging and crowning with thorns; the sentence; Christ bearing the cross; the crucifixion; and the resurrection and the ascension.

There was nothing, the lecturer said, in all this to offend the most delicate taste, or that was inconsistent with devotional emotions or religious instincts. Men and women go up to the performance, once in ten years, as if it were the Mecca of their spiritual pilgrimage; and the entire representation, when once beheld, is a scene never to be forgotten.

At the close of the lecture several photographs of the scenes described were exhibited, which added much to the permanent impressiveness of his remarks, and terminated an evening of singular and profound interest and suggestiveness.

The SECRETARY announced the following correspondence:—

From C. C. Beaman, Cambridge, Feb. 7, 15; E. S. Joslin, Media, Penn., Feb. 9; Lucy Larcom, Boston, Feb. 17; S. A. Nelson, Georgetown, Feb. 6; William S.

Perry, Geneva. N. Y., Feb. 3; J. P. Putnam, Boston, Feb. 14, 4; W. Hudson Stephens, Lowville. N. Y., Feb. 10; Bruxelles, Academie Royale des Sciences, des Lettres et des Beaux-arts, Jul. 15. 25. Aout 30; Buffalo Historical Society, Feb. 14; Dresden, Verein fur Erdkunde, Oct. 15; Genève Société de Physique et d'Histoire Naturelle, Oct. 1, Gorlitz, Die Naturforschende Gesellschaft, Nov. 18; Hague, Entomological Society of the Netherlands, Dec. 12; London, Linnaean Society, Aug. 2; Lugduno-Batavæ, Bibliotheca Universitatis, July 26; St. Petersburg, La Société Entomologique Russie, Oct. 21; Upsal, Société Royale des Sciences, Nov. 1; Washington, Smithsonian Institution, Jan. 20; Wien, Verein zur Verbreitung naturw. Kenntnisse.

The LIBRARIAN reported the following additions:—

By Donation.

BUTLER, BENJ. F., of Washington, D. C. Speech of Hon. G. F. Hoar of Mass. in U. S. House of Reps., Jan. 25, 1872. 8vo pamph. Remarks of Hon. Ellis H. Roberts of New York in U. S. House of Reps., Jan. 31, 1872. 8vo pamph. Speech of Hon. Geo. C. McKee of Mississippi in U. S. House of Reps., Feb., 1872. 8vo pamph.

GARRISON, W. P., of New York. Constitution and By-laws of New England Society of Orange, New Jersey, 1871. 16mo pamph.

HAVEN, HENRY P. Reports concerning the Public Schools of New London, 1871. 8vo pamph.

KIMBALL, JAMES. Massachusetts Register for 1869. 1 vol. 8vo.

LEE, JOHN C. Commercial Bulletin for Jan., Feb., 1872.

NATIONAL ASSOCIATION OF WOOL MANUFACTURES. Bulletin. Vol. III. No. 1. Jan.-March. 1872. 8vo pamph.

SUMNER, CHAS., of Washington, D. C. Laws of the United States. 3d Session, 41st Congress, 1st Session, 42d Congress. 1870-71. 8vo pamph.

UNKNOWN. Worcester Directory for 1871. 1 vol. 8vo.

By Exchange.

ACADÉMIE IMPÉRIALE DES SCIENCES, BELLES-LETTRES ET ARTS DE BORDEAUX. Actes, 3e Série, 32e Année. 1870. 1er et 2e Trimestres. 8vo pamph.

ACADEMIE ROYALE DES SCIENCES ARTS ET BELLES-LETTRES IN CAEN. Mémoires, 1868, 1869, 1870. 1871. 4 vols. 8vo.

ACADEMIE ROYALE DES SCIENCES, DES LETTRES ET DES BEAUX-ARTS DE BELGIQUE. Annuaire, 1871. 16mo pamph. Bulletins, 2me. Ser. T. 29, 30, 31. 1870-71. 3 pamphs. 8vo. Observations des Phénomènes Périodiques pendant l'Années, 1867, 8, 9. 2 pamphlets, 4to.

AMERICAN PHILOSOPHICAL SOCIETY, Proceedings of. Vol. xii, No. 87. July-Dec., 1871. 8vo pamph.

BOORE, A. P. Notice sur un nouveau genre de Ténèbrionides appartenant au Groupe des Adeliides par A. P. De Boore. 8vo pamph. Miscellaneous pamphlets, 4.

BOSTON PUBLIC LIBRARY. Bulletin for Jan., 1872.

DIE PHYSIKALISCH-MEDICINISCHE SOCIETAT IN ERLANGEN. Sitzungsberichte. 3 Heft. Mai 1870 bis Aug. 1871. 8vo pamph.

PUBLISHERS. Gardener's Monthly. Gloucester Telegraph. Half Yearly Compendium of Medical Sciences. Hardwicke's Science Gossip. Haverhill Gazette. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Quaritch's Catalogue. Sailors' Magazine and Seamen's Friend. Salem Observer. Shoe and Leather Journal.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4.

SALEM, MASS., MARCH, 1872.

No. 3.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, MARCH 4TH, 1872.

THE President in the chair. Records of preceding meeting read.

THE OLD CARVED CHAIR.

From a letter of E. W. Farley, Esq., of Newcastle, Me., recently received, we learn that the curious old carved oaken chair, which was given to the Historical Society, June 27, 1821, by Robert Brookhouse, of Salem, is a complete counterpart of the one in his possession, and as far as antiquity and style are concerned, these two chairs are perhaps unequalled by any to be found in New England. Mr. Brookhouse received this chair from the family of Major John Farley, of Newcastle, Me., a native of Ipswich, Mass. Mr. Brookhouse's first wife was a daughter of said Farley, and Mr. Farley's wife was Sarah Dennis of Ipswich. This chair was one of four pieces of furniture of similar wood and carvings belonging to said Sarah Dennis, and was taken to Newcastle on her removal there in 1772 or 1773 — consisting of two

arm chairs, alike in pattern, a tape loom and a chest now in the possession of Mrs. E. G. Perkins, of Salem, having upon it the date "1634;" and there is reliable traditional evidence of the age of said furniture corresponding with the year 1634, and that these articles were brought over from England by the first emigrant of the Dennis family of Ipswich.

A RELIC OF "YE OLDEN TIME,"—A STONE MILL.

In form the mill is mortar like, about as large as a peck measure, with the furred stone fitting so as to make an effectual grinder. It is similar to the stone mills spoken of in the Bible, which the Jewish women used. It was presented by Mr. D. L. D. Balch, of Amesbury, accompanied by the following letter:—

AMESBURY, FEBRUARY 7, 1872.

To the Officers of the Essex Institute:—

GENTLEMEN:—In accordance with a purpose long entertained by me, I hereby offer for your acceptance the "Stone Mill" which was brought to this country by "Lieut. Francis Peabody," in the year 1635.

This "mill" has been preserved in the Peabody family from that date to the present time, mostly at Topsfield. It was finally presented to my father, the late Israel Balch, M. D., some sixty years ago, by Jacob Peabody, and by him kept till his death in 1858.

It was my father's special request that this relic of "ye olden time" should be presented to your Institute, and it is not only a duty but a pleasure to comply with the same.

Trusting that this ancient memento of the ancestor of that honored benefactor, the late George Peabody, may be accepted and preserved through all coming time, I am

Your obedient servant, D. L. D. BALCH.

HOWARD STREET CHURCH.

Mr. GEORGE D. PHIPPEN presented a communication from Rev. C. C. Beaman, formerly of this city, on "The Closing History of the Branch or Howard Street Church in Salem." Referred to the committee on publications

for insertion in the "Historical Collections." At a meeting of the Institute, Monday evening, Jan. 20th, 1862, Rev. Mr. Beaman read an interesting historical sketch of this church, with brief notices of the several ministers who have successively officiated in that place. This paper was printed in the "Historical Collections of the Essex Institute," Vol. iii, page 272.

CLEVELAND'S JOURNALS.

Mr. A. C. Goodell, Jr., read a letter from Nehemiah Cleaveland, of Westport, Conn., tendering to the Institute some journals written by his grandfather, Rev. John Cleaveland, of Chebacco parish, in Ipswich. The thanks of the Institute were tendered to Mr. Cleaveland for his generous offer, and Mr. Goodell was requested to communicate the same.

The SECRETARY announced the following additional correspondence :—

From L. D. Gould, Boston Highlands, Feb. 23; S. A. Green, Boston, Feb. 28; B. H. Hall, Troy, N. Y., Feb. 27, Mch. 1; Francis Harrington, Boston, Feb. 23; John F. McCoy, New York, Feb. 17, 21; S. A. Nelson, Georgetown, Feb. 19, 29; John H. Sage, Hartford, Conn., March 1; W. Hudson Stephens, Lowville, N. Y., Feb. 20; A. Woodward, Franklin, Conn., Feb. 20.

The LIBRARIAN reported the following additions :—

By Donation.

BUTLER, HON. B. F., of Washington, D. C. Speech of Hon. Roscoe Conkling in U. S. Senate, Feb. 19, 1872. 8vo pamph.

KIMBALL, JAMES. Proceedings of the Right Worthy Grand Lodge, I. O. O. F. of Mass. 1867, '8, '9, '70, '71. 9 nos. The World Almanac, 1868, '9, '70, '71, '72. Miscellaneous pamphlets, 10.

MANCHESTER PUBLIC LIBRARY. Eighteenth Annual Report of the Trustees, Dec. 31, 1870. 12mo pamph.

MANNING, ROBERT. Journal de l'Agriculture, Tome iv, 1869, 5 nos. Tome i, ii, iii, 1870. 17 nos. Der Farmers Freund. 1871.

PALFRAY, C. W. Miscellaneous pamphlets, 8.

PERLEY, EDWARD. Directory of St. Paul for 1863. 1 vol. 8vo.

STEPHENS, W. H. of Lowville, N. Y. Directory of Harrisburg for 1839. 1 vol.

STONE, EDWIN M. Thirtieth Annual Report of the Ministry at Large. Jan. 2, 1872. 8vo pamph.

SUMNER, HON. CHAS., of Washington, D. C. Department of Agriculture for 1870. 1 vol, 8vo. Washington, 1871.

By Exchange.

ENTOMOLOGICAL SOCIETY OF THE NETHERLANDS IN 'S GRAENHAGUE. Tijdschrift voor Entomologie. Tweede Serie Vijfde. Deel 1-6. Aflerering, 1869-70. Zesde Deel 1, Aflerering, 1871. 7 pamphlets. 8vo.

FLAX EXTENSION ASSOCIATION IN IRELAND. Third and Fourth Annual Reports of, for the Improvement of the Culture of Flax in Ireland, 1869-70. 2 pamphs. 12mo. Instruction for the Culture and Preparation of Flax in Ireland. 12mo pamph.

GEOLOGICAL AND POLYTECHNIC SOCIETY OF WEST RIDING OF YORKSHIRE. Proceedings of, 1870. 8vo pamph. Leeds, 1871.

KONGLIGA VENTENSKAPS SOCIETETEN, UPSALA, SWEDEN. Nova Acta, Ser. III, Vol. vii. Fasc. I, II. 1869-70. 2 pamphs. 4to. Upsaliæ, 1869-70. Bulletin Météorologique Mensuel, Vol. ii, Nos. 1-12, 1839-70. Vol. iii, Nos. 1-6, 1870-71.

L'INSTITUTE ROYAL GRAND-DUCAL DE LUXEMBURG (CI-DEVANT SOCIÉTÉ DES SCIENCES NATURELLES). Publications, Tome xi.—Années 1869 et 1870. 8vo pamph.

NATURFORSCHENDE GESELLSCHAFT IN BAMBERG. Bericht. 1869-70. 8vo pamph.

NATURFORSCHENDE GESELLSCHAFT IN BASEL. Verhandlungen, Theil 5. Heft 3. 8vo pamph.

NATURFORSCHENDE GESELLSCHAFT IN GÖRLITZ. Abhandlungen, Bd. xiv, 1871. 8vo. Görlitz. 1871.

NATURWISSENSCHAFTLICHE GESELLSCHAFT "ISIS" IN DRESDEN. Sitzungsberichte, 1871. Juli, Aug., Sept. 8vo pamph.

PHILOSOPHICAL AND LITERARY SOCIETY IN LEEDS. Annual Report, 1870-71. 8vo pamph. Leeds, 1871.

ROYAL SOCIETY OF LONDON. Proceedings of, Vol. xviii, Nos. 119-122, Vol. xix, 123-129. 11 pamphlets. 8vo.

SOCIÉTÉ D'AGRICULTURE, SCIENCES ET ARTS DE LA SARTHE. LE MANS. Bulletin, Tomes xi, xii, xiii. 1870, 1871.

SOCIÉTÉ D'ANTHIROPOLOGIE IN PARIS. Bulletins, Tomes iv, v. 1869-70.

SOCIÉTÉ DE PHYSIQUE ET D'HISTOIRE NATURELLE IN GENÈVE. Mémoires, Vol. xxi. part I. 4to pamph. Table des Mémoires Tomes I A. XX. 4to pamph.

SOCIÉTÉ ENTOMOLOGIQUE DE RUSSIA IN ST. PETERSBURG. Horæ Societatis Entomologicæ Rossicæ, Tome vii, No. 4. Tome vii, No. 2. 1871.

SOCIÉTÉ MALACOLOGIQUE DE BELGIQUE IN BRUXELLES. Annales, Tome v. 1870. 8vo pamph.

VEREIN ZUR VERBREITUNG NATURWISSENSCHAFTLICHER KENNTNISSE IN WIEN. Schriften, Band xi, Jahrg. 1870-71. 16mo pamph.

BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences physiques et naturelles. Oct. 15, 1871. No. 166. 8vo pamph. 1871.

IOWA STATE HISTORICAL SOCIETY. Annals of, Jan., 1872. 8vo pamph.

NEW YORK GENEALOGICAL AND BIOGRAPHICAL SOCIETY. Record of, Jan., 1862. 8vo pamph.

RHODE ISLAND HISTORICAL SOCIETY. Roger Williams, a paper read before the Society, Nov. 8, 1871. By Thomas T. Stone. 8vo pamph.

PUBLISHERS. American Chemist. American Journal of Science and Arts. Canadian Journal. Gloucester Telegraph. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Shoe and Leather Journal.

Mr. S. A. NELSON of Georgetown read the following communication on

THE METEOROLOGY OF MOUNT WASHINGTON.

The mountainous region of New Hampshire north of Lake Winnipiseogee, known as the White Mountains has a north and south extension of about sixty miles, and on a cross line is not far from thirty miles wide.

The several ranges are naturally divided into groups, as the Moosilauke group in the southwest, the Franconia region westerly, to the south the Pemigewasset Mountains, centrally the Mount Washington group, and to the north the Stratford Peaks, together with others of less importance.

The Mount Washington group has an area of not far from thirty miles long and fifteen wide and has a north-east and southwest course. Centrally in this range is Mount Washington, in latitude $44^{\circ}, 16', 25''$ and longitude $71^{\circ}, 16', 26''$, west from Greenwich. The altitude is 6,293 feet and it is the highest peak in the group by 500 feet, and the highest east of the Mississippi with the exception of Clingman's Peak in western North Carolina.

Prof. Edward Tuckerman marks out four regions on Mount Washington: First, the *lower forest*, where are found the hard wood species of the lowlands, with the white spruce and fir, forming a dense forest. Secondly, the *upper forest*, composed of black spruce, fir, Frazer's balsam fir, a mountain ash, with rarely the canoe and yellow birch. At four thousand feet altitude these trees become dwarfed and are only found above this height in a few sheltered localities on the southern side of the mountain. The plants in the third, or *sub-Alpine region*, correspond to like localities in mountain regions generally, and from a little below the summit, upward, is the *Alpine region*,

with many plants native to Labrador and Greenland. The change of climate from the base to the summit is equivalent to that of several degrees north.

In this paper I shall confine my remarks exclusively to the meteorological phenomena of the mountain. An extended inquiry would be of greater value, but it is impossible to more than briefly touch upon the several points under consideration. I do not propose to discuss theories so much as to present facts to show the advantages mountain stations offer over those less elevated.

Some of the highest authorities have held that the study of meteorology should begin from above. Among these are Biot and Poey. And why meteorologists should have been so long content to study the aspects of the weather within the narrow limits of the lower earth currents, it is hard to decide. It is true that in Europe similar observations to those made on Mount Washington have been maintained for a limited time, but never till the past year in this country, yet nowhere have they been deemed of much value.

When we look through the rifts of a low running S. E. scud, and see, at an altitude of less than a mile, an upper current of cirro-cumulus rapidly moving towards the northeast, or in a fair day, observe it progressing at the rate of fifty miles an hour, while at the surface the wind is not above ten miles—a desire to investigate the phenomenon is aroused, and we devise ways and means to accomplish this end.

Where shall we go but to some lofty mountain peak that rises to the altitude of the atmospheric current in which that stratum of cloud is drifting?

East of the meridian of 105° west from Greenwich, over the whole continent, north of the N. E. trades, there is an atmospheric current constantly flowing in a

northerly direction. It flows in a descending plane differing but slightly from that of the limit of perpetual snow. Its descent is known to be not far from 16,000 feet at the equator to very near the surface at the poles. Over this country its range is from about 3,000 to 12,000 feet and vertically it cannot be far from 6,000 to 8,000 feet.

It varies in direction and elevation with the changing seasons—runs lower in summer than winter—and varying on different parallels, it flows near the earth when no surface wind interferes. Over New England its course is nearly W. S. W. to E. N. E., but west of the Alleghany Mountains it is more southerly. Its elevation and direction also vary in the same latitude with the variations of the weather, and probably correspond with the increase and diminution of magnetic force.

This is the *counter-trade*, and comes to us from the South Atlantic Ocean. Within it form our storms. Its ameliorating influences are seen in the southerly storms of winter, in the gentle southwest gales of April and May. Opposed to this is the dry, northwest wind which sweeps down from the Arctic regions. Many maintain that this is a surface wind. So it is when it has driven itself under the counter-trade and fills the space between that higher current and the earth. But it becomes an intermediate one whenever an easterly wind prevails at the surface, and its place is between the surface wind and the southwesterly upper current of the counter-trade. Our records show that this frequently occurs.

It is not necessary to enlarge upon this, as it is no part of my purpose to combat theories, and I only allude to it at all, that it might be seen clearly wherein Mount Washington, or any isolated peak, is superior to stations less elevated, for the particular department of observations on aerial currents.

These advantages, at Mount Washington, we find in the elevation of more than a mile above sea-level, and that it so nearly reaches the line of perpetual snow, in the considerable height over the surrounding peaks; in the summit being usually above the lower surface winds and lower cloud stratum.

As it is, to a certain extent within the region of the higher upper currents, barometric, thermometric and hygrometric conditions obtain, which do not at lower stations, or in the same time and degree, and of value in connection with them in forecasting storms.

BAROMETRIC OBSERVATIONS.

It is well understood that changes in the velocity of the wind and amount of cloud, exercise a marked influence upon the barometer. These disturbing elements being in full force here, hence the sensitiveness of the instrument and its fluctuations, as well as its wide range. Its sensitiveness is best seen in a nearly calm day when clouds are drifting over; then the mercurial column will not rest for a moment, and yet the range for an hour may not be more than .002 to .004 of an inch. The fluctuations during a gale are very great, frequently from one half hour to another, half an inch or more. The range from December 1st, 1870, to May 14th, 1871, was 1.595 inches. The lowest reading corrected for temperature was 22.120 and the highest was 24.104. The first was during the great gale of December and the last towards the latter part of May. It has a wide range in the great gales, or hurricanes of winter, but not in the summer storms.

Almost hourly observations were taken from 11 A.M., January 22d, to 9.30 A.M. of the 23d. This was one of the three great gales. The range was 1.116. The long-

est and most severe storm of all occurred in February, commencing on the 4th. Observations from 7 A. M. of the 4th* to the same hour on the 5th gave a range of 1.403. Other storms gave like results. On the 21st of May thunder showers prevailed over an extended area; but none passed over the mountain or very near. The barometer was depressed, owing more to the intensity of magnetic force than other causes as the weather was fine with us. The 22d was characteristic of the mountain. It was warm, clear and calm in the morning, with a terrific thunder storm at noon and wintry weather at night. At 11 A.M. the temperature was 66° —the highest during the summer with one or two exceptions—at 3 P.M. 26° . The barometric fluctuations were constantly going on early in the morning, falling 1.124 from 8 A.M. to noon. The oscillations of the barometer were in the same time as the discharge of electricity at the telegraph table; both in the afternoon of the 21st and on the 22d.

Humboldt has said, speaking of the horary variations of the barometer, that "no atmospheric circumstances—neither rain, nor fair weather, nor wind, nor tempest—affects the perfect regularity of these oscillations under the tropics; but they subsist alike at all times and in all seasons."

We cannot say this of Mount Washington. On the contrary, as the diurnal variation is governed by the rate of the wind and amount of cloud, it is only in calm, clear weather that it is at the usual hours, and, as it is seldom clear or calm, it may be said that here it does not conform to the general law. The tables of several stations in the New Hampshire Geological Report, compared with Mount Washington, show that on the mountain, there are times of high and low pressure which do not extend to the lower stations. These seem to be confined

to the upper atmosphere. But of the great atmospheric disturbances, covering one or more days' time, having a sweep of thousands of miles, we get, it appears from the record, the first barometric indications at lower stations. In a few instances the Mount Washington record gives earlier indications than the other stations; this is true of the December gale.

Preceding the gale of January 22d and 23d, the highest reading was on the 19th at each place, but it was some hours in advance of Mount Washington at Hanover, N. H., and Lunenburg, Vt., where the maximum obtained at 7 A. M.; at Gorham, N. H., 2 P. M., and at Mount Washington not until 4.57 P. M. At Lunenburg and Hanover, the minimum was on the 21st; at Mount Washington the 22d. The maximum after the gale abated was obtained at Hanover and Gorham the 25th; at Mount Washington and Lunenburg on the 26th at 7 A. M. Lunenburg has an elevation of 1,124 feet, and the climatic conditions more nearly correspond to those of Mount Washington than the other stations above mentioned.

TIHERMOMETER.

Although our observations in this department are not so complete as we could wish, yet they furnish much interesting and valuable matter, imperfect as they are. We had no spirit thermometer when we most needed it, and our mercurial instruments, though excellent, were too few in number. Dr. Kane says that "errors dependent on wind, sun and local radiation should be carefully guarded against." These remarks apply with much force to Mount Washington especially as regards radiation from clouds lying below the summit.

From partial records for the year from December, 1870, to November, 1871, inclusive, I think the mean tempera-

ture of the year may be not far from -5° Centigrade, equivalent to 23° Fahrenheit. It cannot possibly be so high as the zero isothermal line Centigrade. For the year, that of Montreal is 40° ; and the isothermal line of 45° passes a little south of Mount Washington, while the summit enjoys the climate of southern Greenland.

The highest observed temperature was 66° ; and the lowest reliable reading of the mercurial thermometer was -54° . On the 5th of February at 3 o'clock in the morning the reading was -59° . That it should read correctly at -54° may be questioned. The freezing point of mercury is not yet well established. Dr. Kane says that "thermometers correct at -40° and agreeing would show a difference of 15° or 20° at -60° ." So it was found by Sir James Ross at Leopold Harbor. Nor does Dr. Kane regard "the contraction of colored alcohol at very low temperatures, as sufficiently investigated to enable us to arrive at the cause or quantity of error." "The freezing point of mercury varied" with him "from between -38.5° and 41.5° ." Sir Edward Belcher obtained results where the mercury descended as low as -44° . Our thermometers were the Smithsonian standard in the winter, and later the standard instrument made by James Green, of New York—all excellent instruments. In the case under consideration the fall to -54° was gradual; but this is admitted to be no proof that the fall was not due to the contraction of the mercury after it became solid, as this frequently occurred in Dr. Kane's observatory. Of one thing I am fully assured; and it is, that there is much to be learned regarding the freezing point of mercury.

Nothing is more certain than the fact that the rise and fall of temperature, as a rule, is first obtained here. For instance, a low temperature, accompanying the easterly movement of the high, cold, upper wind current, is from

six to thirty-six hours earlier on Mount Washington than at lower stations. High and low temperatures are registered here, which we shall notice under winds, that do not descend to lower levels. On the other hand low temperatures are observed below when there is no change on the mountain. This we shall explain further on. So there are cold terms when the minimum is lower at some not distant stations than here.

As with the barometer so the thermometer has no fixed hours of daily maxima and minima. At Mount Washington there were seventeen days when the maximum was attained at 2 P.M., to ten at 7 A.M., and nine at 9 P.M., or when the readings were the same as at 2 P.M. At Montreal, twenty-nine at 2 P.M., to two at 7 A.M., and five at 9 P.M. At Hanover, twenty-three at 2 P.M. to four each at 7 A.M. and 9 P.M. In winter the changes are sudden and great; often in a half-hour from 5° to 25° and at any period of the twenty-four hours. The change of temperature from Sunday morning, February 5th at 3 o'clock, if we call it at that hour, -54° , to Tuesday noon following, when the thermometer indicated, in the sun, 62° , was 116° . Thirty to forty degrees difference in a day is of common occurrence.

HYGROMETRIC OBSERVATIONS

Were made with great care. During the winter we used wet and dry bulb thermometers hung side by side, and after the warm season opened the Mason Hygrometer. With all our care these froze and so were ruined. For that locality the ordinary wet and dry bulbs are most convenient at all times and in that moist climate require but little attention. Of these observations, Professor Cleveland Abbe, of the Signal Office, Washington, has said "the hygrometric observations from the mountain stations

are of the highest importance. . . . I manage daily to derive information which foretells the coming storm, and would do so far more accurately had we two other stations distant one to three hundred miles."

The hygrometer alone is a reliable instrument for determining the weather some time in advance of a change. On the mountain we could assure ourselves as to the weather for twelve to twenty-four hours; and after summer travel commenced our observations showed practical results daily; inasmuch as tourists stopping at the hotel availed themselves of the information thus gained in making their arrangements for the ensuing day.

It is the hygrometer upon which we depend more than the barometer. It is seldom that the readings of the wet and dry bulbs differ more than four or five degrees, quite rare that the difference is greater than ten. In this country as great a difference as thirty-five degrees has been recorded, and in India sixty degrees. I am led to believe that however unfavorable the climate is, in some respects, to health, the exemption from coughs and colds is due to this uniformly moist atmosphere.

THE WINDS.

The records show almost constant and exceedingly high velocities. Winds of from thirty to sixty miles an hour are the rule, light winds and calms the exception. In winter, ninety to one hundred miles is not uncommon, while in summer it seldom rises to ninety. The winter gales, which are westerly or northwest when attended by a low temperature, spend their fury in a gentle north wind bringing a moderation of temperature, quite frequently. This has been noticed by Dr. Hayes, by McClintock and Parry. I state the fact, but confess that I am unable to explain the phenomenon. Here, as in the Arctic zone,

there are high northerly winds excessively cold, and this seems to be the normal condition of things. On the mountain this gentle north wind will change suddenly, with a rising barometer, to south or southwest, which we can understand readily to be the downward movement of the southwest counter-trade descending to our level but not passing below it. A perfect calm is of the rarest occurrence in winter, for more than an hour or two. At Hanover for three months there were reported ninety-nine calms. Easterly winds are exceptional; out of two hundred and seventy observations, ten only were easterly. At Lunenburg seventy-three in the same time and Hanover forty-one. At Gorham, out of one hundred and forty-seven there were forty-one. This average holds nearly as good for the summer months. Three or four hundred feet greater elevation would place the summit above the course of the lowest surface winds. Neither do the northwest winds run much over a thousand feet higher. The altitude of 8,000 feet would undoubtedly give constant westerly winds.

From the direction and thickness of the cloud stratum, the height of the atmospheric current may be at all times determined. On the 23d of June at 7 A.M., the cloud enveloping the summit was unusually dense; the wind near the depot, southeast, in puffs, and calms, and nine miles per hour. On the roof of the hotel it was southwest and fifteen miles at least. An hour later the rain was pouring in torrents, and at the depot the wind had changed to southwest, thirteen miles an hour. These records show that gentle westerly winds may prevail on the summit, while below, at stations near and remote, the wind is easterly and tempestuous. They show, too, that the heavy gales of the winter were first felt on the mountain. The northwest wind sweeping southward, pushes up,

wedges itself under the current-trade, as it were (for atmospheric currents do not mingle, but stratify, the Huntonian theory to the contrary notwithstanding), gradually descending to the sea-level.

Of one summer high wind there is a partial report. June 8th at 5 P. M., the gale arose on the mountain reaching its height at 1 A. M., the 9th. At Bethlehem, N. H., fifteen miles west (1,800 feet above the level of the sea), there was a gentle breeze till 11 P. M., the 8th, but from that hour to 5 A. M., the 9th, the wind was high. At Bethlehem a cool, windy day followed, but on the mountain it was nearly calm and mild. Nor did it reach its highest point at Hanover till it had abated on Mount Washington.

CLOUDS.

It is obvious that the higher upper currents, especially of cirrus, which often floats at an elevation of 21,000 feet, will not present any very marked difference at the altitude of a little more than a mile. Generally it is during the transition stage into cirro-stratus or cirro-cumulus that we find this elevation advantageous. It becomes decidedly so when we would study the lower cloud-forms or observe the condensation of an approaching storm. As is well known, the higher upper current of cirrus is a westerly one, that it has a movement from west, or south of west, eastward. Passing into any sub-form the course may be from any point between S. S. W. and N. N. W. The lower currents of cumuli, which are rare in winter, and the stratus run low, seldom rising to the level of the summit. The stratus of winter is often extended over an area of several hundred square miles, and rarely has a greater average thickness, in the vicinity of the mountain, and probably not elsewhere, than 1,000 feet.

It is doubtful if, in this latitude, it ever exceeds 3,000

feet. Yet it is this thin stratum of cloud that gives the lowlands so many gloomy days in winter, while on the mountain there is no cloud from sunrise to sunset. It is on such days, when it is serene there and cloudy below, that we have a high temperature comparatively. This has been noticed in Europe. On the Brocken, in winter, under similar conditions, it is warmer than at Berlin.

In April there was the finest possible display of cumuli, an immense mass of cloud many thousand feet vertically and miles in extent. We may see the lower currents moving in different directions at the same time. Immediately around the mountains if they run low, they follow the line of the several ranges. It is not unusual at all seasons to see them on a S. E. course south of Mount Washington, and north of Mount Adams a S. W. one at the same time. Condensation may be going on at one point, in a contrary one, but a few miles distant, the cloud is re-dissolving. A distinguished French savant has said that he never saw, on the Alps, the formation of a cloud. A close observer, living on Mount Washington will have many opportunities to witness condensation over the summit. We did frequently, and Dr. Brewer of Boston has informed me that he once observed this on Mt. Washington.

[To be continued.]

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4.

SALEM, MASS., APRIL, 1872.

No. 4.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, MARCH 4TH, 1872.

[*Continued.*]

STORMS.

In observations on an approaching storm the elevation of 6,000 feet is important, inasmuch as the observer is above the lower strata, the "storm-seud." Here he may note the changes in kind and relative position of the several cloud strata from the moment the storm is seen along the western horizon, two hundred miles distant, till it shall envelop the lofty peak of Mount Washington. The elevation of a storm moving east can be seen as far distant as New York City.

When condensation advances but little faster than the storm line, it is a more interesting study than when the condensation is going on for days, and over a wide extent of country at the same time. If rapid and with the storm, we notice at an immense height the "polar bands" of cirrus, lower, cirro-stratus, or cirro-cumulus. From

the first until it breaks on us, the progressive movement is traced on a north and south line—west of that line is the storm—east, fair weather; the upper current precedes somewhat the lower stratus, or “scud.” When the line is within a hundred miles we see this more plainly. The under current of stratus—a condensation in advance of the storm—is gradually spreading out on every side. Towards night the prominent landmarks are hidden from view. We can see that the lower stratus current is running under the advancing cloud. The cloud shuts down upon the mountain, all about us an easterly storm is raging, here it is a southwesterly or westerly one.

A storm presenting its southern side to us is not so interesting, as it condenses most rapidly on this side. On the summit there are sometimes southeasterly storms, but seldom one north of east. The great storm of October 4th, 1869, was from this direction, as was one short but severe gale and heavy rain of March last.

AURORA BOREALIS.

We witnessed many fine Auroras, but no new facts regarding them are on record. It is to be regretted that we were not prepared to observe to some extent, electrical phenomena, particularly in connection with auroral storms. The only peculiar features noticed were the apparent nearness to the earth of the auroral waves, as a rule; and three times, displays when the moon was past the first quarter. Our line, or our end of the line, gave us much trouble at such times. With the insulated wire of the mountain station three miles in length, there is afforded an opportunity for the study of electric currents in the terrestrial strata as well as atmospheric currents such as is seldom offered. The mountain is a gigantic insulator, no “ground” being obtainable on the summit.

ATMOSPHERIC ELECTRICITY.

I had an opportunity of observing in our line the effects of the thunder showers of the 21st of May. Being alone, I could not pay that attention to the several phenomena which I desired. We had a very sensitive compass which we used as a galvanometer. The oscillations of the needle were followed by a report of distant thunder. As the shower was fifteen or twenty miles distant, several seconds elapsed between the deviation of the needle and the report. The instruments were not "cut out" at first so that I obtained simultaneously with the oscillation of the needle, the click of the armature. I could now time the oscillations of the barometer. These I found to correspond to the oscillations of the needle in time and amount with the intensity of the current. I did not continue these experiments long from fear of injury to the instrument, and possibly injury to myself.

The next day there was a succession of showers, with one at noon on the summit continuing an hour, during which time the depot was struck five times. Early in the morning, I had taken the precaution to connect the rails by an iron bar, and this I think saved the building from damage. It is said that, since the road was completed, scarcely a day passes, when there are not electrical discharges on the mountain, but that many of these seek the track, as the best conductor, following it to some point near the river at the terminus. In view of the terrible results attending mountain thunder storms, to those so unfortunate as to encounter them, of which we have accounts of large parties perishing together by a single discharge of electric fire, we might be surprised to learn that no harm was ever done buildings or persons on Mount Washington, although the hotel has more than once been struck. Is

not this exemption due to the fact that the summit is insulated? and that the electric current seeks a more favorable path to the earth? I have noticed repeated discharges earthward, over Raymond's Cascade, in the Great Gulf in a single shower.

AQUEOUS PHENOMENA.

It frequently rains at a temperature of 28° and at times with even a lower reading. It is not uncommon for it to snow furiously when the reading is as high as 37° . The warm waves descending to the level of the summit bring rain even in January. Owing to the violence of the wind, measurements of rain and snow are practically useless. Although the fall of snow is very great, rarely more than two or three feet lie long. The quantity held in suspension during a gale is astonishing. From November to April it is, that of all high Alpine regions, a dry impalpable powder. A snow-flake mentioned in the Press telegram of January 8th as "new," which was the cause of considerable merriment to a certain class of public journals, may be described as pyramids of six sides base depressed with the sides corresponding to the exterior. It seems that Capt. Parry saw this form of snow-flake in one of his voyages and described it in his report.

Of the frost formations, very beautiful, the highest charm of winter mountain scenery, it is only necessary to remark, that the forms are due to certain conditions of the wind, and that it is built up by aggregations of minute specilia of ice, the condensation of vapor at an extremely low temperature. Doubtless electricity plays an important part in the work, as it is only with westerly winds that it forms.

At a higher temperature than that necessary for the frost formation, ice makes on the rocks and surface of the

snow, a solid blue ice. This disappears during high north-west gales as the cold, dry N. W. wind, full of positive electricity sweeps over the mountains. Late in December a singular ice formation was discovered. I have searched meteorological works for a description, but have not yet found whether it is known or not. It is a transparent ice on the surface of rocks: cellular in structure, the cells mainly hexagonal, some triangular and a few of an indefinable form. The cells averaged about .25 inches in depth by .15 to .20 of an inch in breadth.

To sum up results, we may add that mountain observatories are of the highest importance in the elucidation of climatological problems. The advantages secured are of direct, practical benefit in the daily forecasts of storms. Let the signal Office establish them, wherever practicable, throughout the country, and meteorology will be advanced shortly to the dignity of a science, a claim hardly compatible with the facts at the present time.

After Mr. Nelson had concluded the reading of his interesting communication, the following votes were unanimously adopted:—

Voted, That the Secretary be requested to tender to Hon. Judge Putnam of the Superior Court, the thanks of the Essex Institute for his interesting and instructive lecture delivered at our last meeting, giving a very vivid and graphic account of his visit to Ober-ammergau during the performance of the Passion Play in the summer of 1871.

Voted, That the Secretary be requested to transmit to Mr. S. A. Nelson of Georgetown the thanks of the Essex Institute for his interesting communication, giving a clear and succinct account of the results of the meteorological observations made during a residence on the top of Mount Washington in the winter of 1870-71.

Adjourned.

REGULAR MEETING, MONDAY, MARCH 18th, 1872.

THE PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From Pennsylvania Historical Society, Mch. 7; Charles C. Abbott, Trenton, N. J., Mch. 15; J. M. Caller, Salem, Mch. 14; Henry Cook, Boston, March 11; Robert Howell, Nichols, Tioga Co., N. Y., Feb. 7; E. M. Stone, Providence, R. I., Mch. 12; William H. Yeomans, Columbia, Conn., March 4.

The LIBRARIAN announced the following additions :—

By Donation.

ABBOTT, C. C., of Trenton, N. J. The Works of Thomas Chalkley. 1 vol. 8vo. Phila. 1749. Printed by B. Franklin & D. Hall.

AMERICAN PHILOLOGICAL ASSOCIATION. Proceedings of the Third Annual Session held at New Haven, Conn., July, 1871. 8vo pamph.

BOLLES, E. C. Address by Rob't B. Fairbairn in Hartford, Conn., July 12, 1871. 8vo pamph. Assay of Gold and Silver by Thomas M. Blossom. 12mo pamph.

BUTLER, B. F., M. C. Frelinghuysen's Speech in U. S. Sen., Feb. 26, 1872.

FOOTE, CALEB. Files of several County papers for Jan., Feb., Mch., 1872.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 11.

IVES, MRS. BENJ. H. True Christian Religion. 1 vol. 8vo. Boston. 1833. New Jerusalem Magazine. 2 vols. 8vo. Boston. 1833-4. Liberal Preacher. 1 vol. 8vo. Sermons by Rev. A. Bancroft. 1 vol. 8vo. Worcester. 1822. American Journal of Geology and Natural Science. 1831. 1 vol. 8vo. Analogy of Religion. 1 vol. 8vo. Hartford. 1819. Bible News. 1 vol. 8vo. Boston. 1812. Worship and Love of God. 1 vol. 12mo. Naturalists' Pocket Book. 1 vol. 12mo. Unitarian Miscellany. 1 vol. 12mo. Insect Architecture. 1 vol. 16mo. Insect Transformation. 1 vol. 16mo. Formation of the Christian Character. 1 vol. 18mo. Times of the Saviour. 1 vol. 16mo. Christian Monitor. 1 vol. 18mo. Alphabet of Insects. 1 vol. 18mo. History of Insects. 1 vol. 16mo. New Church Doctrine. 1 vol. 12mo. The Pursuit of Knowledge. 1 vol. 12mo.

PACKARD, A. S., JR. The Development of Limulus Polyphemus by donor.

RICHES, W. S., of Columbus, Ohio. Cincinnati Directories for 1857-8. 2 vols. 8vo. Ohio State Register. 1857. 1 vol. 8vo. C. C. C. and I. R. R. Gazetteer. 1870-1. 1 vol. 8vo. Columbus Directories, 1855, 1857-8, 1859-70.

STATE BOARD OF HEALTH OF MASSACHUSETTS. Third Annual Report. Jan. 1872. 8vo pamph.

SUMNER, CHARLES, of U. S. Senate. Speech of, in U. S. Senate. Feb. 28, 1872.

U. S. LIBRARY OF CONGRESS. Catalogue of Books added to the Library of Congress in 1870. 1 vol. 4to. Congressional Directory, 42d Congress, 2d Session. 8vo pamph.

YEOMANS, WM. H., of Columbia, Conn. Public and Private Acts and Resolutions of Conn. for 1812-1834. Miscellaneous pamphlets, 48.

By Exchange.

AMERICAN ANTIQUARIAN SOCIETY, Worcester. Proceedings of, Oct. 21, 1871. No. 57. 8vo pamph.

NEW JERSEY HISTORICAL SOCIETY. Proceedings of, Vol. II. No. 4. 1871.

NEW YORK LYCEUM OF NATURAL HISTORY. Annals of. Vol. X., Nos. 4-5.

PUBLISHERS. American Naturalist. Christian World. Gardner's Monthly. Gloucester Telegraph. Haverhill Gazette. Ipswich Chronicle. Essex County Mercury. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Salem Observer. Shoe and Leather Journal. Sotheby's Catalogue. Western Lancet.

ESSEX COUNTY SPIDERS.

J. H. EMERTON exhibited his collection of spiders from the neighborhood of Salem and gave a general account of the classification of spiders, illustrated by sketches of some of our common species. The collection contained some eight hundred specimens, representing one hundred and sixty species of the following suborders:—

Orbitelariæ (round web spiders)	29	species.
Retitelariæ (net spiders)	33	“
Tubitelariæ (tube spiders)	43	“
Citigradæ (wolf spiders)	19	“
Saltigradæ (jumping spiders)	20	“
Laterigradæ (crab spiders)	16	“

The Orbitelariæ were represented by the large black and yellow *Epeira riparia* Hentz, one of our most conspicuous spiders which can hardly escape the notice of any one who goes into the country in August, by *Epeira vulgaris*, the brown and gray spider, which spins round webs everywhere about our yards and barns, *Epeira trifolium*, one of our largest *Epeiras*, with round purple abdomen marked with white spots, and the less familiar species with thorny and odd shaped abdomens, *Epeira stellata* and *spinea*.

Among the Retitelariæ were *Theridion vulgare* Hentz, perhaps the most common of all our house spiders whose webs occupy the corners of our rooms at all seasons, and

our common *Linyphia marmarata*, *L. communis*, and *L. costata*, conspicuous by their bright colors and curious and complicated webs.

Of the Tubitelariæ perhaps the most familiar was the common *Agelena nævia* Hentz, whose webs are seen on dewy mornings almost covering the grass in our fields, each web sloping toward a tube in which the spider waits.

Among the Citigradæ were some specimens of *Lycosa Carolinensis* Hentz, the largest of the group, whose feet extend over three inches. One of these was caught in Saugus and another in Andover.

The Saltigradæ were represented by our little gray jumping spider, *Epiblemum faustum* Hentz, which is seen on walls in the sunshine running with equal facility backward, forward or sideways, and our large gray *Attus* which may be found at almost any season, in thick white cocoons under stones.

The Laterigradæ included the large white *Thomisus fartus* Hentz, which lives on flowers in gardens and is often brought into the house upon them, and the dingy gray *Thomisus vulgaris* Hentz, so common on fences, where it can hardly be distinguished from unpainted wood.

The collection was arranged in tube bottles which were pinned by the corks in trays.



REGULAR MEETING, MONDAY, APRIL 1st, 1872.

THE President in the chair. Records of preceding meeting read.

THE SECRETARY announced the following additional correspondence :—

From Henry A. Breed, Lynn, Mch. 20; J. J. H. Gregory, Marblehead, Mch. 20; J. C. Holmes, Detroit, Mich., March 18; Yeomans, William H., Columbia, Conn., March 22; Augsburg Naturhistorischer Verein, Dec. 4; Bern, Die Naturforschende Gesellschaft, Dec.; Boston Public Library, March 18, 22; Cincinnati Public Library, Mch. 20, 27; Königsberg, Physikalisch oeconomische Gesellschaft, Dec. 10; Lisbonne, Académie Royale des Sciences, Oct. 5; Mans, Société d'Agriculture Sciences et Arts, Nov. 20; Neuchâtel, Société des Sciences Naturelles, Nov. 24; Wien, Kaiserliche Akademie, des Wissenschaften, Jan'y 7; Zurich, Naturforschende Gesellschaft, Aug. 18.

The LIBRARIAN reported the following additions :—

By Donation.

BOLLES, E. C. Address of J. A. Bolles, L.L.D., delivered at the fiftieth Annual Commencement of the National Medical College, Mch. 7, 1872.

BROOKS, HENRY M. Tristram Shandy, 3 vols. 16mo. Vicar of Wakefield, 1 vol. 16mo. Management of the Tongue, 1 vol. 16mo. Poetical Works of Oliver Goldsmith, 1 vol. 16mo. Histoire de Charles XII, 1 vol. 16mo. Federal Calculator, 1 vol. 12mo. Triumphs of Temper, 1 vol. 16mo. Trials of a School Girl, 1 vol. 16mo. Handbook i Takling, 1 vol. 12mo. Prophecy of Dante, 1 vol. 16mo. Lara, 1 vol. 16mo. Miscellaneous pamphlets, 12.

BUTLER, B. F., of U. S. H. R. Carpenter's Speech in U. S. Sen., Feb. 29, 1872. Report of the Department of Agriculture for Feb., 1872. Harlan's Speech in U. S. Sen., Feb. 28, 1872.

CABOT, JOSEPH S. American Turf Register, 9 vols. 8vo. Scriptorum Romani, 21 vols. 12mo. Southern Review, 5 vols. 8vo. New York Review, 8 vols. 8vo. Mass. Register & U. S. Calendar, 1808-1838, 35 vols. 16mo. Universal Magazine, 3 vols. 8vo. Henry's Chemistry, 2 vols. 12mo. Stewart on the Mind, 1 vol. 8vo. Southern Review, 5 nos. New York Review, 4 nos.

DEPARTMENT OF THE INTERIOR, Washington, D. C. Statistics of Population. Ninth Census, 1870. Tables I-VIII. 1 vol. 4to.

HOLMES, JOHN C., of Detroit, Mich. Twentieth Annual Report of the Board of Water Commissioners of Detroit for 1871.

LEVETTE, G. M., of Indianapolis, Ind. Geological Survey of Indiana by E. T. Cox, 1 vol. 8vo.

LITTLE, BROWN & Co., of Boston. Divinity of Christ, 1 vol. 16mo. Boston, 1872.

NEAL, THEO. A. Fleet's Almanack, 1792. 1 vol. 16mo. Postes de France, 1785. 1 vol. 16mo.

SECRETARY OF STATE OF MASS. Mass. Public Documents for 1870, 4 vols. 8vo. Acts and Resolves of Mass. passed in 1871, 1 vol. 8vo.

UNKNOWN. Annual Report of the Selectmen of Wenham. Year ending Feb. 16, 1872. Annual Report of the School Committee of Wenham. Year ending Mch., 1872.

WOODMAN, CYRUS, of Cambridge. Records of the Proprietors of Narragansett Township, No. I (now the Town of Buxton), 1733-1811. 1 vol. 8vo. Privately printed.

By Exchange.

ARCHIV DER ANTHROPOLOGIE (Hrsg V. A. Ecker, L. Lindenschmit) in BRAUN-SCHWEIG. Band V, Heft 1. 4to pamph. 1871.

CROSSE ET FISCHER. Journal de Conchyliologie. 3e Série. Tome xi. No. 4.

INSTITUT NATIONAL GENEVOIS IN GENÈVE. Bulletin, No. 35, Vol. xvi, pp. 225-385. 1870.

KONIGLICH PHYSIKALISCH-ÖKONOMISCHE GESELLSCHAFT IN KÖNIGSBERG. Schriften, 1830-1870, inc. 16 pamphlets. 4to.

MASS. AGRICULTURAL COLLEGE, Amherst. Ninth Annual Report of the Trustees of. Jan., 1872.

MINNESOTA HISTORICAL SOCIETY. Annual Report of, 1871.

NATURFORSCHENDE GESELLSCHAFT IN BERN. Mittheilungen, No. 711-744, 1871.

NATURFORSCHENDE GESELLSCHAFT IN FREIBURG. Fortschritt herausgegeben zur Feier des fünfzig jährigen Jubiläums.

NATURFORSCHENDE GESELLSCHAFT IN ZURICH. Vierteljahrsschrift, Jahrg. xv. 1870. 4 pamphlets, 12mo.

NATURHISTORISCHER VEREIN IN AUGSBURG. Bericht, 1871.

PHYSIKALISCH-MEDICINISCHE GESELLSCHAFT IN WÜRZBURG. Verhandlungen Neue Folge. ii Band. 3 Heft.

SOCIÉTÉ D'ACCLIMATION. Bulletin Mensuel, Tome viii. 2me. Série Jan.-Nov., 1871. 6 pamphlets, 8vo. La Production Animale et Vegetale. 8vo pamph.

SOCIÉTÉ DES SCIENCES NATURELLES IN NEUCHÂTEL. Bulletin, Tome ix, 1er Cahier.

PUBLISHERS. American Chemist. Essex County Mercury. Gloucester Telegraph. Haverhill Gazette. Ipswich Chronicle. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

Mr. JAMES KIMBALL read a copy of a contract, which he had found among the county records, between an inhabitant of Salem and the town of Saybrook, Conn., the former to furnish the latter with a pair of colors for the military company of the town in 1675.

Thes presents witness y^t I, Samuel Crampton of Salem, doe ingage to furnish y^e towne of Saybrook, in y^e county of New London, with a pr of collures fitt for y^e company ; of dubble sarsnet, red, with a white field to shew the red cross ; a flag staf and tassells sutable. To be sent the first opportunity after the first of May next, & upon y^e receipt whereof wee, whose names are underwritten, doe ingage to pay unto y^e sd Samuel Crampton, or his order, the sum of five pounds in pease & rye at three shillings per bushel, provided y^t y^e sd collures be of y^e sd kind, one & three quarters on y^e staff, two yds. & one quarter florish, with a blew ball in y^e sd collures, which sd payment is to be made at or before the first day of Oct. next insuing y^e date hearof, as witness our hands this 30th March, 1675.

WILLIAM PRATT,
ABRAHAM POST.

I underwritten doe bind myselfe & heires to pay or cause to be paid to Samuel Crampton of Salem or his assigns the just sum of four pounds & Six pence in pailles at 10s. a dozen, & half bushels at 20s. per dozen, to be delivered at Middleton at y^e landing place by Goodman Seaseage at or before the last of Sept. after y^e date herof.
March 27, 1675.

JOHN WILLOCK.

I underwritten bind myselfe & heires to pay Samuel Crampton of Salem six bushels & one half of indian corne to be delivered at Wethersfield landing place at or before, &c. March 24, 1675.

SAMUEL BUTLER.

Nathaniel Graye also binds himself to pay the same as Samuel Butler.

Entered as a memorandum or caution per me Hillard Veren, Recorder, this 23 d. 8 mo., :76.

Reg. Deeds, Book 4, Leaf 414.

The red cross with which this banner was to be provided called up the story of Endicott and the red cross as graphically related by Hawthorne in his "Twice Told Tales,"—the act of Endicott, in tearing the cross from the banner, showing his republican instinct was bold and defiant. The Massachusetts Records were also quoted, showing the action of the General Court then held at "New Towne," censuring Endicott for his act, and prohibiting him from holding office for a year. He protested against the action, and it was then voted that he be committed for contempt in protesting; but, upon an acknowledgment of his offence, he was dismissed. These records constitute the foundation of Hawthorne's graphic story. It was that spirit of liberty which was abroad in Massachusetts and which, from time to time, thus cropped out,

that caused, at the hands of the mother country, the imposition of those oaths of allegiance required of all judicial officers, sheriffs and other officials in the provincial period of our history. The following were read, as illustrations of the same:—

OATHS APPOINTED TO BE TAKEN INSTEAD OF THE OATHS OF
ALLEGIANCE AND SUPREMACY: AND DECLARATION.

I *A. B.* Do sincerely Promise and Swear, That I will be faithful and bear true Allegiance to His Majesty *KING GEORGE*.

So Help me G O D .

I *A. B.* Do Swear, That I do from my Heart, abhor, detest and abjure as Impious and Heretical, that damnable Doctrine and Position, that Princes Excommunicated, or deprived by the *Pope* or any Authority of the *See of Rome*, may be Deposed or Murthered by their Subjects, or any other whatsoever; And I do declare that no Foreign Prince, Person, Prelate, State or Potentate, hath or ought to have any Jurisdiction, Power, Superiority, Pre-eminence or Authority, Ecclesiastical or Spiritual, within the Realm of GREAT BRITAIN.

So Help me G O D .

I *A. B.* Do solemnly and sincerely in the presence of GOD, Profess, Testify and Declare, That I do believe that in the Sacrament of the LORDS SUPPER, there is not any Transubstantiation of the Elements of *Bread* and *Wine* into the *Body* and *Blood* of CHRIST, at or after the Consecration thereof by any Person whatsoever: And that the Invocation or Adoration of the Virgin *Mary*, or any other Saint, and the Sacrifice of the *Mass*, as they are now used in the Church of *Rome*, are Superstitious and Idolatrous. And I do solemnly in the Presence of GOD, Profess, Testify and Declare, That I do make this Declaration and every part thereof, in the plain and ordinary sense of the Words Read unto me, as they are com-

monly understood by *English Protestants*, without any Evasion, Equivocation or mental Reservation whatsoever; and without any Dispensation already granted me for this purpose by the *Pope* or any Authority or Person whatsoever; or without any Hope of any such Dispensation from any Authority or Person whatsoever, or without Thinking that I am or can be acquitted before GOD or Man, or absolved of this Declaration or any Part thereof, although the *Pope* or any other Person or Persons or Power whatsoever, should dispense with or annul the same, or declare that it was null and void from the beginning.

JOS. WOLCOT.

SALEM, y^e 26th of March, 1722.

Josiah Wolcot, Esq., personally appearing, took the several Oaths of Allegiance & Supremacy & subscribed the above Declaration with the Oath of Abjuration. And also was sworn to the due performance of his office of one of the Justices of his Maj'tys Peise & Court of Comon Pleas for the County of Essex. Taken before us,

BENJ. LYNDE, }
JOHN TURNER, } of his Majesty's Council.

THEOPHILUS BURRILL.

Jurat the 21st day of May, 1722.

Before us, BENJ. LYNDE, }
JOHN TURNER, } of his Majesty's Council.

WM. GEDNEY.

SALEM, Essex, ss.

Jurat the 19th day of July, 1722.

COR. BENJ. LYNDE, }
JOHN TURNER, } of his Majesty's Council.

JOHN WILLIAMS.

ESSEX, ss, Salem, the 7th of Aug't, 1722.

Mr. John Williams personally appearing took the several Oaths & Declarations above, with the Oath of Abju-

ration & was also Sworn to his Office of Deputy Sheriff of the County of Essex.

Before us, BENJ. LYNDE, } of his Majesty's Council.
JOHN TURNER, }

I *A. B.* Do truly and sincerely Acknowledge, Profess, Testifie and Declare in my Conscience, before GOD and the World, That Our Sovereign Lord KING *GEORGE* is Lawful and Rightful KING of the Realm of *Great Britain* and of all other His Majesties Dominions and Countries thereunto belonging; (And I do solemnly and sincerely Declare, That I do believe in my Conscience, that the Person pretended to be Prince of *Wales* during the Life of the Late King *James*, and since his decease pretending to be, and taking upon himself the Stile and Title of King of *England*, by the name of *James the Third*, hath not any Right or Title whatsoever to the Crown of the Realm of *Great Britain*, or any other the Dominions there-to belonging; And I do Renounce, Refuse and Abjure any Allegiance or Obedience to him.) And I do Swear, That I will bear Faith and true Allegiance to KING *GEORGE*, and Him will Defend to the utmost of my Power, against all Traiterous Conspiracies and Attempts whatsoever against His Person, Crown, or Dignity; And I will do my utmost endeavor to disclose or make known to His Majesty and His Successors, all Treasons and Traiterous Conspiracies which I shall know to be against Him or any of them; And I do faithfully promise to the utmost of my Power, to Support, Maintain and Defend the Limitation and Succession of the Crown (against him the said *James*, and all other Persons whatsoever) as the same (by an Act, Intituled, *An Act for the further Limitation of the Crown, and better Securing the Rights and Liberties of the Subject*) is and stands limited to the Princess *Sophia*, Electress and Dutchess-Dowager of *Hanover*, and the Heirs of Her Body, being Protestants. And all these Things I do plainly and sincerely Acknowledge and Swear, according to these express words by me Spoken, and according to the Plain and Common Sense and Understanding of the

same Words, without any Equivocation, Mental Evasion, or Secret Reservation whatsoever. And I do make this Recognition, Acknowledgment, Abjuration, Renunciation and Promise, Heartily, Willingly and Truly, upon the true Faith of a Christian.

So Help me G O D.

JOS. WOLCOT.

Capt. the 26 : of March, 1722.

COR. BENJ. LYNDE, } of his Majesty's Council.
JOHN TURNER, }

THEOPHILUS BURRILL.

Jurat the 21th day of May, 1722.

Before us, BENJ. LYNDE, } of his Majesty's Council.
JOHN TURNER, }

WM. GEDNEY.

ESSEX, ss, Salem, 19th of July, 1722.

Jurat, Cor.

BENJ. LYNDE, } of his Majesty's Council.
JOHN TURNER, }

JOHN WILLIAMS.

ESSEX, ss, Salem, the 7th of Aug't, 1722.

Mr. John Williams took the above Oath before us,

BENJ. LYNDE, } of his Majesty's Council.
JOHN TURNER, }

Mr. F. W. PUTNAM read a communication from Commodore B. F. Sands of the United States Naval Observatory requesting the several scientific societies to memorialize congress for an appropriation to defray the expenses for a due observation of the Transit of Venus in December, 1874.

Referred to a committee consisting of Messrs. Kimball, Upham, and the chair to report at the next meeting.

Adj.

REGULAR MEETING, MONDAY, APRIL 15, 1872.

PRESIDENT in the chair. Records read.

The SECRETARY announced the following correspondence:—

From George Derby, Boston, April 3; J. Munsell, Albany, April 6; D. Van Nostrand, New York, April 8; Baltimore, Peabody Institute, April 4; Boston Public Library, April 2; Buffalo Historical Society, April 3; Cincinnati Public Library, April 3, 4; Minnesota Historical Society, April 9; New Jersey Historical Society, Mch. 30; New York Lyceum of Natural History, April 8; Ohio Historical and Philosophical Society, April 5.

The LIBRARIAN reported the following additions:—

By Donation.

BOARD OF PUBLIC CHARITIES, Phila., Penn. Second Annual Report, 1871. 1 vol. 8vo.

DEPARTMENT OF THE INTERIOR, Washington, D. C. Statistics of Wealth, Taxation and Public Indebtedness. 4to pamph. 1871.

FOSTER, JOHN, Boston. History of the Foster Family, of Ipswich. 1 vol. 8vo.

GARFIELD, J. A., M. C. Smithsonian Report, 1870. 1 vol. 8vo.

MUNSELL, JOEL, of Albany, N. Y. Chips for the Chimney Corner. 1 vol. 16mo. Miscellaneous pamphlets, 28.

OFFICE OF THE CHIEF OF ENGINEERS, U. S. A. Report of the Chief of Engineers, 1871. 1 vol. 8vo.

PARKER, WM. B. A Golden Chaine, or the Description of Theologie. 1 vol. 4to London. 1635.

PEABODY LIBRARY, of Georgetown, Mass. Report of the Trustees, 1872.

PERRY, Rev. W. S., of Geneva, N. Y. Papers relating to the History of the Church of Pennsylvania, 1680-1778. 1 vol. 4to. Privately printed.

SHEPPARD, JOHN H., Boston. Sketch of Commodore Sam'l Tucker and Description of the New Masonic Temple in Boston. 8vo pamph. 1872.

By Exchange.

ALBANY INSTITUTE. Proceedings of the. Vol. i, Pt. II. 1871.

BOSTON SOCIETY OF NATURAL HISTORY. Proceedings. Vol. xiv. sigs. 8-14.

HISTORICAL AND PHILOSOPHICAL SOCIETY OF OHIO. Journal. Vol. i, Pt. I. 1872.

NEW ENGLAND HISTORICAL AND GENEALOGICAL SOCIETY. Register and Journal for April, 1872.

NEW JERSEY HISTORICAL SOCIETY. Collections of. Vol. 7. 1 vol. 8vo. 1872.

NEW YORK GENEALOGICAL AND BIOGRAPHICAL SOCIETY. Genealogical and Biographical Record for Apr., 1872.

VERMONT STATE LIBRARY. Transactions of the Vermont Dairymen's Association, 1870-1.

PUBLISHERS. American Naturalist. Christian World. Gardener's Monthly. Gloucester Telegraph. Haverhill Gazette. Ipswich Chronicle. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4.

SALEM, MASS., MAY, 1872.

No. 5.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, APRIL 15, 1872.

[*Continued.*]

ON THE TRANSIT OF VENUS.

THE committee to whom was referred the resolution offered by Mr. F. W. Putnam at the last meeting of the Institute to memorialize Congress for an appropriation to defray the necessary expenses of observations of the approaching Transit of Venus

REPORT

That this subject has received the favorable consideration of several of the European governments, and preparations are being made by them for a thorough observation of the coming Transit of Venus, which will occur on December 8, 1874. In Russia, whose territory presents many favorable points for observation of the phenomenon, a committee, organized by Prof. Strüve, has had under consideration, during the past two years, the establishment of a chain of observers at positions one hundred miles apart along the region between Kamtschatka and

the Black Sea. The principal astronomers of Germany have held two conferences, each of several days' duration, which have resulted in a decision to furnish four stations for heliometric observation of the planet during its transit; one of these will be in Japan or China, and the others probably at Mauritius, Kerguelen's and Auckland Islands, and some of these will also be equipped for photographic observations. A French commission on the subject sat before the war, and reported to the Bureau des Longitudes that it was desirable for their government to provide for observing stations at Saint Paul's Islands and Amsterdam, Yokohama, Tahiti, Noumea, Mascate and Suez. Lately the Academy of Sciences has applied to the Government for the requisite funds. The British preparations are probably more advanced than those of any other country. The astronomer royal first called attention to the transit in 1857, and again in 1864. In 1868 he began to shape definite plans, selected the observing stations, and opened communications with the Government upon the financial requirements of the undertaking.

In view of these facts it is desirable that the United States Congress, though having appointed a commission at its last session, should at an early day make provision that will enable this commission to place a corps of observers in the field, provided with suitable apparatus and abundant means to conduct in a proper manner the observations of this approaching transit of Venus.

It will require time to arrange the apparatus, some of which will undoubtedly have to be made for the occasion—conferences will be essential with the observers of other countries, so that the plans of observation may be in strict harmony with each other, and, before the positions are finally decided upon, the intentions of the other nations should be fully known.

The *personnel* of the various observing expeditions should be agreed upon and commence practice with the time and position instruments. At Woolwich a temporary observatory has been fitted up, with the object of forming a more accessible school of observation. At the

several positions the erection of temporary observatories will be required, and a residence of the observers for three or four months to ascertain the absolute local time of the phenomenon and the exact longitude. This accordingly increases the extent of preparation.

Your committee would recommend the adoption of the following memorial and resolves :—

To the Honorable Senate and House of Representatives in Congress assembled :

The Essex Institute, an organization located at Salem, in the State of Massachusetts, for the promotion of Science, Literature and the Arts, respectfully memorialize your Honorable Bodies to take into consideration the propriety of granting a suitable appropriation to enable the scientific corps connected with the Executive Branch of the Government, and such others as may be associated with them, to make a thorough and accurate observation of the approaching transit of Venus.

Resolved, That the President and Secretary be authorized to sign the above memorial in behalf of the Essex Institute and that the Secretary transmit the same, with a certified copy of the doings of the Institute in relation thereto, to the Hon. B. F. Butler, the Representative in Congress from this district, with a request to present the same and to use all proper means to secure a favorable consideration of this measure.

H. WHEATLAND, }
JAMES KIMBALL, } Committee.
W. P. UPHAM, }

ANCIENT TOPOGRAPHY OF SALEM.

JAMES KIMBALL, Esq., exhibited a map showing the old topography of Salem and presented the results of a careful examination of the early records of the county of Essex, for the purpose of gleanings a class of historical

facts hitherto neglected, and tending to give us a clearer insight into the early history of the first settlement at Salem, more especially in reference to the ancient topography of its territory, its development and adaptation to the wants and uses of civilized life.

Mr. Kimball has devoted considerable time in gathering up and placing upon record these fragmentary portions of our history, which, as each generation passes away, will become more and more obscure and difficult to be determined, unless they are rendered more enduring than the imperfect and decaying records of those early days, or the failing memories of those aged persons who are fast passing from our midst. These efforts to preserve a valuable department of our local history will undoubtedly induce others to continue the examination, so that, in the future, we may be able to present to the historian materials for a full and perfect history of Salem, that shall be a worthy tribute to the memories of the early settlers of *Naumkeke*.

This communication, one of a series which Mr. Kimball has in preparation, elucidating portions of our local history, was referred to the committee on Publications to be printed in the "Historical Collections."

A committee, consisting of Messrs. James Kimball, W. P. Upham, Caleb Cooke, Wm. Neilson and John Robinson, was appointed to nominate a list of officers to be balloted for, at the annual meeting.

Edward Dean of Salem was elected a resident member.

REGULAR MEETING, MONDAY, MAY 6TH, 1872.

THE PRESIDENT in the chair. Records of the preceding meeting read.

The SECRETARY announced the following correspondence :—

From B. F. Butler, Washington, April 28; R. Manning Chipman, Lisbon, Conn., April 9; C. H. Goss, Salem, April 18; J. D. W. French, Boston, April 26; J. Munsell, Albany, N. Y., April 23, 30; The Nation, New York, April 18; L. R. Stone, Newton, April; American Geographical Society, April 9, 19; Cincinnati Public Library, April 19, 24; St. Petersburg, Société Entomologie de Russie, Feb. 23; Washington, Smithsonian Institution, April 24, 29.

The LIBRARIAN reported the following additions :—

By Donation.

BOLLES, E. C. Miscellaneous pamphlets, 10.

BUTLER, B. F., M. C. Moore's Speech in U. S. H. R., April 6, 1872. Sawyer's Speech in U. S. Sen., April 17, 1872. Sargent's Speech in U. S. H. R., April 18, 1872. FOLGER, WM. C., of Hingham, Mass. Miscellaneous Town Reports, 6.

FOOTE, CALEB. Files of several County papers for Feb., Mch., Apr., 1872.

GOULD, JOHN H., of Topsfield. Crusii Moral, 1 vol. 12mo. Leipsic, 1744. Tribune Almanacs. 8 nos. American Almanacs. 4 nos. Les Comédies de Terence. 1 vol. 16mo. Halle. 1720.

HAYDEN, DR. F. V. List of Elevations and Distances west of the Mississippi River. 12mo pamph.

KNIGHT, B. Locke's Essays. 1 vol. 8vo. Campbell on Rhetoric. 2 vols. 8vo. Cousins' Psychology. 1 vol. 12 mo. Macy's Exploration of the Red River. 1 vol. 8vo. Insects Injurious to Vegetation. 1 vol. 8vo. Report of the President and Directors of the Pittsburgh & Boston Mining Company. Jan., 1849. 1 vol. 12mo. Report of the Superintendent of the U. S. Coast Survey for 1853. 1 vol. 4to.

LEE, JOHN C. Commercial Bulletin, Mch. 30, April 13, 20, May 4, 1872.

MANNING, ROBERT. Missionary Herald. 128 nos. Home Missionary Journal. 41 nos. New England Farmers and Gardeners' Journal. 208 nos.

PALFRAY, C. W. Miscellaneous pamphlets, 10.

PEABODY, MRS. FRANCIS. Journal of the American Unitarian Association. 37 nos. Every Saturday, 18 nos. Miscellaneous pamphlets, 27.

PERRY, REV. W. S. of Geneva, N. Y. Miscellaneous pamphlets, 6.

STONE, HENRY, Washington, D. C. Laws of Philadelphia. 1 vol. 8vo. Phila. 1860. Laws and Ordinances of Boston, 1856, 1 vol. 8vo. Ordinances of Baltimore, 1858, 1 vol. 8vo. Corporation Ordinances of New York, 1859, 1 vol. 8vo. Statute Laws of Louisville, 1857, 1 vol. 8vo. Revised Charter of Buffalo, 1856, 1 vol. 8vo. Laws and Ordinances of Cincinnati, 1859, 1 vol. 8vo. Acts of Tennessee, 1865, 1865-6, 1867-8, 1868-9, 4 vols. 8vo. Senate Journal of Tennessee, 1865-6, 1868-9, 2 vols., 8vo. House Journal, 1865, 1868-9, 2 vols., 8vo. Journal of the Assembly of Newfoundland, 1868, 1 vol. 4to. Laws of North Carolina and Tennessee, 1850, 1 vol. 12mo. Laws of Nashville, 1860, 1865, 2 vols. 12mo. Ordinances of Richmond, 1859

1 vol. 12mo. Nashville Directories 1855-6, 1857, 1859, 3 vols. 12mo., 1865, 1866, 1867, 1868, 1869, 5 vols. 8vo. Political Text Book, 1860, 1 vol. 8vo. American Museum, 1 vol. 8vo. Directory of New York, 1866. 1 vol. 8vo. Memoir of H. L. White, 1 vol. 8vo. Pitkin on Commerce. 1 vol. 12mo. Directories of Cities in the West and South, 1867-8. 1 vol. 4to. History of England. 1 vol. 8vo. Biography of Sam'l Lewis. 1 vol. 12mo. The Heavenly Pathway. 1 vol. 12mo. How to get a Farm. 1 vol. 12mo. Ten Acres Enough. 1 vol. 12mo. Bayonet Exercises for the Army. 1 vol. 12mo. Genealogy of the Mudge Family, 1638-1868. 1 vol. 8vo. Constitutional Convention. 1 vol. 8vo. Bankers' Magazine, 1851-2. 1 vol. 8vo. Smithsonian Reports, 1865, 1866. 2 vols. 8vo. Patent Office Reports, 1851-2, 1865. 2 vols. 8vo. Department of Agriculture, 1867. 1 vol. 8vo. Memphis Riots, 1866. 1 vol. 8vo. Miscellaneous pamphlets, 50.

SUMNER CHAS., of U. S. S. Two Protests of C. Sumner. Mch. 26, 27, 1872. 8vo.

By Exchange.

CINCINNATI PUBLIC LIBRARY. Geological Survey of Ohio for 1870. 1 vol. 8vo. HISTORICAL SOCIETY OF PENNSYLVANIA. Discourse on the Inauguration of the New Hall, Mch. 11, 1872, by John W. Wallace. 8vo pamph.

PUBLISHERS. American Naturalist. Canadian Naturalist. Essex County Mercury. Gloucester Telegraph. Haverhill Gazette. Ipswich Chronicle. Land & Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Pavilion. Peabody Press. Quaritch's Catalogue. Salem Observer. Western Lancet.

ANCESTRY OF SUSANNAH INGERSOLL.

The PRESIDENT read extracts from a manuscript sermon of the Rev. Dr. William Bentley of the East Church, Salem, which was delivered in December, 1811, on the occasion of the death of Mrs. Susannah Ingersoll, presenting a very graphic yet brief notice of the ancestry of the deceased in the line of descent from Richard Hollingsworth, one of the primitive settlers,—son William Hollingsworth, daughter Mary, the wife of Philip English, daughter Susannah, who married John Touzell, daughter Susannah, the wife of John Hathorne and mother of the subject of this notice. For a more extended account see "Hist. Coll. of Essex Institute," Vol. xi, page 228.

THE FAIRFAX AND HATHORNE HOUSE.

Reference was made by the President to the old house on the corner of Essex and Cambridge streets, in process of being taken down to erect on its site a more elegant structure. The original part of this house was built about

1685 by Benjamin Marston, the land having been purchased, some five years previous, of Jonathan Neale, who received it by inheritance, being an heir to the estate of Francis Lawes.*

Mr. Marston sold the estate, Feb. 24, 1701-2, to James Menzies,† formerly of Boston, then of Salem, who afterwards conveyed it to Philip English, and Philip English, July 25, 1724, to his daughter Susannah, the wife of John Touzell;‡ and from her it passed to her daughter Mary, the wife of William Hathorne, and for many years it was in the possession of that family, and known as the Hathorne House. The original part is about fifteen feet from the street. Additions have been made from time to time,—first, a two story store on the western part of the front, and afterwards, within the remembrance of several now living, that on the eastern part, three stories in height; at the same time the first addition was made of the same height. In the taking down of this interesting relic of the olden times, the various alterations and additions were traced from the original with its projecting second story, and lean-to in the rear, to the building as we last beheld it. With this, as with many of our old houses, interesting associations are connected. In this house§ lived William Fairfax, during his residence in

* See Essex Reg. Deeds, Book 42, fol. 256.

† See Essex Reg. Deeds, Book 15, fol. 51.

‡ See Bulletin of Essex Institute, Vol. 1, page 75. Essex Reg. Deeds, Book 5, fol. 283.

§ The following deposition from the manuscripts on file in the Library of the Institute confirms this tradition:—

“The Deposition of Christian Swasey, formerly Christian Legroee who Saith That about five years ago she Lived with Capt. John Touzell and Susanna his wife in the House Mr. Fairfax now dwells in in Salem, and that Mr. Phillip English, the Father of the said Susannah Then dwelt with Them in said House, and That She Then & There att Diverse Times heard the said Phillip English Say to his Daughter Susannah Touzell I give you all my Household goods and att Several Times when he said So He also bid Her fetch it up Every Thing from his House to Her House, To which She Replied She had not House Room Enough to Hold it and

Salem as collector of the port. William Fairfax, son of Henry Fairfax and grandson of Henry, the fourth Lord Fairfax, was born in 1691. He served in the British army, and was stationed for a time at St. Helena, and subsequently at the Bahamas, where he married Sarah, daughter of Major Walker, and was appointed Chief Justice of the Island. About the year 1725, on account of the unhealthiness of the climate, he removed to New England, having received the appointment of collector of customs of this port. In 1731 his wife died, leaving him four children, one of whom, Anne, born in Salem, married Lawrence Washington and afterwards George Lee. William Fairfax subsequently married Deborah Clark, daughter of Francis and Deborah (Gedney) Clark, of Salem. In 1734 he accepted the offer, to be the superintendent of the estates, of his cousin Thomas, the sixth Lord Fairfax, who had become the proprietor of the northern neck of Virginia, through his mother, who was Catherine, daughter of Lord Culpepper. He soon after removed from Salem, and at first took up his residence in Westmoreland County, but subsequently removed to a plantation called Belvoir, fourteen miles below Alexandria. He was collector of his majesty's customs for the South Potomac, and for some time President of the Council of Virginia. He died Sept. 3, 1757, aged sixty-

That about four years Since They all removed Down to the House where They now Live, and That she often Times since has heard the said English Say He had Given all his Household Goods to his Daughter Touzell for her and her Children.
The Mark.

CHRISTIAN X SWASEY.

Essex, ss. Salem, Aug. 2, 1732.

Then Christian Swasey made oath to the truth of the foregoing Deposition (Phillip English, jun., and Wm. Browne being present at the Caption who objected that their Father Mr. Phillip English Sen. hath not for these several years past been of a sound and Disposing mind) and this evidence is Taken to be in Perpetuam rei memoriam.

BENJ. LYNDE.
BENJ. LYNDE, Jun. } Justice of Quorum unus."

five years. Of several children by the second marriage, Bryan became afterwards the eighth Lord Fairfax; William died at Quebec in 1759, a lieutenant in the British army; and Hannah married Warner Washington, a nephew of General Washington.

THE RATTLE OF THE RATTLESNAKE.

Mr. F. W. PUTNAM gave a description of the structure of the horny appendage to the tail of many snakes, especially developed in the genus of Rattlesnakes, and controverted the idea of natural selection having anything to do with its peculiar development. He also thought that the supposition that the rattle was a benefit to the snake, as a means of enticing birds, by its sound imitating that made by the Cicada, as suggested by a writer in a late number of the "Naturalist," could not be accepted. The Cicada was not a ground insect, and was comparatively rare, even among the trees, in such localities as were most frequented by the rattlesnake. Secondly, the sound made by the snake was very slight under ordinary circumstances, and the rattle was not sounded to any extent unless the snake was disturbed by some cause. His own observations on these snakes, in their natural habitat, led him to believe that it was not at all their nature to set up a rattling for the sake of enticing birds to them, but that they would slowly and cautiously approach their victim, or else lie in wait ready to give the fatal spring upon anything that came near. He believed that the rattle was in reality a detriment to the snake, except in so far as it served to call the sexes together which, from the unsocial habits of the species, he thought was most likely its true function.

ANNUAL MEETING, WEDNESDAY, MAY 8TH, 1872.

ACCORDING to the notification, the meeting was held at 3 P. M. The President in the chair. Records read.

The annual reports of the officers and of the curators were read and accepted, and from them the accompanying

RETROSPECT FOR THE YEAR,

exhibiting a satisfactory condition of affairs and a gradual development of the plans and objects of the Institute, has been compiled.

Members. Changes occur in the list of members—by the addition of new names and the withdrawal of some by resignation, removal from the county, or by death. In this connection, notices of three of our associates, who have deceased within the year, are inserted.

W. H. A. Putnam, son of Eben and Elizabeth (Appleton) Putnam, died at Salem, Aug. 30th, 1871, in the thirty-ninth year of his age. From the age of fourteen until the year preceding his death he had led a sailor's life, making many voyages to the East Indies, Europe, Australia, and the Pacific coast of America, as master or factor. During these voyages he collected, very extensively, specimens in all departments of zoology, which have greatly enriched the museums at Salem and Cambridge.

J. Willard Peele, son of Willard and Margaret (Appleton) Peele, died at his seaside residence in Beverly, Sept. 29th, 1871, aged sixty-seven years. In early life he went to Manila and established the house of Peele, Hubbell & Co., where he resided many years. He returned to this country about 1845, and has since resided in Salem, except during the last three or four years in Boston.

Benjamin Cox, son of Benjamin and Sarah (Smith) Cox, born in Salem, Jan. 9th, 1806, graduated at Harvard College in 1826, studied medicine with Dr. A. L. Peirson and after receiving the degree of M. D., established himself in his native city, where he obtained a large practice, winning the attachment of those to whom he ministered by his suavity of manners, genial disposition, and skill in his profession. Though always interested in passing events, he never mingled much in public life outside the duties of his profession. He died Nov. 30th, 1871.

The meetings have been continued as usual. Three FIELD MEETINGS have been held, at Beverly, East Gloucester, and Rockville in Peabody. At the meeting in Beverly, the Wenham Pond and City Water Works were visited and many kind attentions were extended by the Superintendent and his assistants. The *cyclone* or *tornado*, which passed over the pond and extended through a part of Wenham on the Sunday preceding, was the subject of remarks from Mr. A. W. Dodge, and the results of his observations, with the statement of Mr. D. H. Johnson, have been printed in the BULLETIN.

At the meeting in East Gloucester the citizens of the place were very attentive, especially the Rev. Mr. Gannett, the pastor of the church in which the meeting was held; who kindly, at our suggestion, prepared a very interesting history of the Baptist society in that place, which has been printed in the BULLETIN. Messrs. Bolles, Johnson, Phippen, Emerton and others made extended remarks suggested by the various specimens collected during the forenoon rambles.

It was deemed proper that meetings should occasionally be held in the vicinity of Ship Rock, Peabody, so that the members of the Institute might have an opportunity

to visit this remarkable boulder, which, with an acre of land adjacent, is the property of the Institute ; accordingly, one was held on Wednesday, August 2d.

A cordial invitation was received to hold a meeting at Rowley during the month of September, but owing to peculiar and unusual circumstances it was deemed advisable to postpone to another season.

A special meeting was held on the evening of Sept. 5th to listen to the reading, by Judge Lord, of his memoir on the life and character of Mr. Huntington, ex-President of the Institute. This paper has been printed in the eleventh volume of the "Historical Collections" and copies have been also struck off in a separate form. The address was listened to with intense interest and was a faithful and correct delineation of Mr. Huntington's character.

Evening meetings have been held on the first and third Monday evenings, except during the months of June, July, August and September. The meeting on Monday, Oct. 16th, was devoted principally to remarks upon the great loss which our sister institutions, the Chicago Historical Society and the Chicago Academy of Sciences, had sustained by the great conflagration that had devastated so large a portion of Chicago on the 8th, 9th and 10th of October, and in the destruction of their entire libraries and collections. Resolutions of sympathy and proffers of aid were passed. A brief history of these Institutions was presented, with some account of their condition when visited by several members of the Institute in the month of August preceding.

Papers or lectures have been communicated, by Dr. A. H. Johnson, on some Mementos from the Franco-German War ; W. H. Foster, on Reminiscences of the Salem and Boston Stage Company ; Mr. F. W. Putnam, on the

Ancient Fortifications on the Wabash River, Indiana, and on the Mammoth Cave of Kentucky and its Inhabitants; A. C. Goodell, Jr., a sketch of the Legislation of Mass., the Provincial Period, and an account of the Puritan Holidays; Rev. E. S. Atwood, on the Beginnings and Growth of Language; Dr. A. S. Packard, on Insects Injurious to Vegetation noticed in this vicinity the past season; J. J. H. Gregory, Esq., of Marblehead, two lectures on the Result of his Observations during a trip by rail to California, his visit to Salt Lake City, Yosemite Valley, the Great Trees, etc.; Hon. J. P. Putnam of the Superior Court, a very interesting and graphic account of the "Passion Play" at Ober-ammergau, which he witnessed in the summer of 1871; Mr. S. A. Nelson, of Georgetown, on the Meteorology of the White Mountains; James Kimball, Esq., some account of the Judicial Oaths in the Colonial Days in the interest of loyalty; also, an interesting sketch of the Ancient Topography of Salem. Mr. James H. Emerton exhibited his Collection of Spiders and explained the system of classification and other interesting facts in their natural history. From others, many short communications and brief remarks were presented. The attendance on some of these occasions was very large, and the subjects under discussion elicited a great degree of interest and attention.

It may be deemed appropriate in this connection to allude to the lecture on Mt. Washington illustrated by the camera, delivered at the rooms by Mr. S. A. Nelson, and also a series of five lectures, on the Microscope and what it shows us, by our associate, Rev. E. C. Bolles; these lectures were also illustrated by the lantern with the calcium light, which were very successfully manipulated with the assistance of Mr. E. Bicknell. It is to be hoped that lectures with illustrations of this character will be

given during the next season. This plan has thus far succeeded admirably in rendering the study of the sciences attractive.

The library has received by donation and exchanges 1,046 bound volumes and 8,543 pamphlets, besides newspapers, manuscripts, etc., the donations from one hundred and ten individuals and twenty-six societies, the exchanges from ninety-six societies and incorporated bodies, of which sixty-four are foreign. From the editors of the "American Naturalist" one hundred and eighty-seven serial publications.

It is only requisite at this time to present these statistics, the particulars having been reported at the regular meetings and printed in the BULLETIN.

Museum. Many valuable additions have been made to the department of Natural History, which have been deposited with the Trustees of the Peabody Academy of Science, and have been acknowledged, duly cared for and properly arranged by the officers of that Institution. The specimens of an historical interest and works of art are placed in Plummer Hall under the immediate superintendence of the officers of the Institute. Those of an historical interest consist of a large collection of antiquarian and historical relics; paintings and engravings of many of the old houses, and of the persons who have in years past been prominent in our annals; medals; coins; paper currency, etc., etc. Additions continue to be made to this department, the collection is becoming one of great value, and more extended accommodations are required in order to have it properly arranged and classified. The few specimens of works of art, possessing no special interest, are not arranged systematically, and may be regarded only as a nucleus, around which it is desirable that, at an early

day, an art museum may be formed. The recent introduction of drawing into our public schools, the increased attention given to artistic studies, and a growing appreciation of skilled labor, and the large remuneration it commands, require that some efforts by the Institute should be given in this direction. To meet these increasing demands of the public upon our resources, may we not reasonably expect a liberal response from members and friends?

Horticultural exhibitions have been very successfully conducted during the past season. The old zeal that, years long since, actuated our movements in this direction, seems to have been renewed in a younger generation and to burn with an undiminished lustre. A series of twelve exhibitions have been held, commencing on Monday, May 29th, and closing on Wednesday, November 8th, including two, opened only during the evening, for the display of the night blooming cereus, and the annual in September, opened to the public from Tuesday, the 19th, to Friday, the 22d. On this latter occasion, the hall was very tastefully decorated with festoons and wreaths of evergreens, stands and baskets of flowers; many choice pot plants and a goodly collection of fruits and vegetables were placed upon the tables. Contributions were received not only from those having extensive grounds, but from many whose gardens were of limited dimensions. The aggregate made fine exhibitions, and varied with the successive appearance of those showy and attractive objects that adorn the garden, coming and going at regular intervals, marking with great exactness the progress of the seasons in their annual course. The attendance was large and the general interest manifested by the visitors seemed to indicate that our humble efforts in

this direction may lead to the promotion of a taste for the cultivation of beautiful flowers, fine fruit and choice vegetables in this community.

Financial. The Treasurer's report shows an increase in the annual income, yet additional means are requisite to enable the Institute to perform in a fitting manner the various duties which the community may reasonably expect.

DEBITS.

Athenæum, for rent and Librarian,	\$350.00
Salaries, 781.00; Coal, 147.25,	928.25
Postages, 20.44; Sundries, 55.51,	75.95
Social meetings and Excursions,	772.00
Publications, 1238.50; Bank Tax, 11.93,	1250.43
Gas, 70.20; Express, 30.40; Insurance, 30.00,	130.60
Collections, 6.15; Balance of last year, 335.77,	341.92
Balance in Treasury,	2.48

Historical.

J. Perley, for binding,	75.00
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Natural History and Horticulture.

Exhibition season, 1870, 26.87; do. 1871, 159.78,	186.65
	<hr/> \$1,113.28

CREDITS.

Dividends of Webster Bank, 20; Social meetings and Excursions, 1,206.45, \$1,226.45	
Hall, 123.00; Sundries, 10.25; on acc't of note, 21.15,	154.40
Athenæum, proportion of coal, janitor, etc.,	148.62
Publications, 428.28; Assessments, 1,278.00,	1,706.28

Historical.

Dividend Naumkeag Bank, 24.00; Michigan Central R. R. dividends, 60.00,	84.00
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Natural History and Horticulture.

Dividends Lowell Bleachery, 160.00; P. S. & P. R. R., 19.50,	179.50
Horticultural Exhibitions, 1871,	238.78

Davis Fund.

Coupons Burlington and Missouri River Railroad Bonds,	138.25
Coupons Dixon, Peoria and Hannibal R. R. Bonds,	237.00
	<hr/> \$1,113.28

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4.

SALEM, MASS., JUNE, 1872.

No. 6.

One Dollar a Year in Advance. 10 Cents a Single Copy.

ANNUAL MEETING, WEDNESDAY, MAY 8TH, 1872.

RETROSPECT FOR THE YEAR.

[*Continued.*]

Publications. The BULLETIN has been continued in monthly numbers, giving full reports of the doings of the Institute, and abstracts of papers read at the meetings; this makes an annual volume of some one hundred and sixty pages and a copy of each issue is sent gratuitously to the members. Vol. xi, No. 1, of the "Historical Collections" has been printed, and another part is nearly ready for distribution.

A fund, securely invested, the income of which to be expended in printing the proceedings of the Institute, and papers on scientific and historical subjects presented at its meetings, also records, diaries, letters and other material that will tend to elucidate our local history, is a great desideratum, and would tend to rescue from oblivion many interesting and valuable memorials of the olden times.

The importance of multiplying copies of all valuable documents, for which purpose the press is the great agent, cannot be overestimated, and numerous citations can be adduced in confirmation of the statement. The incidents connected with the late great conflagration at Chicago may suffice in this case. The Historical Society of that city lost much that is irrecoverable; as manuscript documents and correspondence relative to the early history of Illinois. In the Academy of Sciences of Chicago were lost also the valuable manuscripts containing the results of the Scientific work of Dr. William Stimpson for nearly twenty years; these were ready for the press, awaiting the action of government to have them printed.

OFFICERS ELECTED.

for the year ensuing and until others shall be chosen in their stead.

President.

HENRY WHEATLAND.

Vice Presidents.

Of History — A. C. GOODELL, JR. *Of Horticulture* — WM. SUTTON.
Of the Arts — GEO. PEABODY. *Of Natural History* — F. W. PUTNAM.

Recording and Home Secretary.

AMOS H. JOHNSON.

Foreign Secretary.

A. S. PACKARD, JR.

Treasurer.

HENRY WHEATLAND.

Librarian.

W. P. UPHAM.

Superintendent of the Museum.

JOHN ROBINSON.

Curators of Historical Department.

W. P. Upham, M. A. Stickney, John Robinson.

Curators of Natural History Department.

H. F. King, G. A. Perkins, William Neilson.

Curators of Department of Horticulture.

R. Manning, A. F. Bosson, Wm. A. Ireland.

Curators of Department of the Arts.

James A. Gillis, F. H. Lee, H. F. G. Waters.

Lecture Committee.

Jas. Kimball, Geo. Perkins, Wm. Northey, Wm. Neilson, E. C. Bolles.

Finance Committee.

J. C. Lee, R. S. Rogers, James Upton.

Field Meeting Committee.

A. W. Dodge, C. M. Tracy, E. N. Walton, Caleb Cooke, A. B. Hervey.

Library Committee.

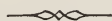
J. G. Waters, Alpheus Crosby, H. M. Brooks.

Publication Committee.

A. C. Goodell, Jr., F. W. Putnam, R. S. Rantoul, H. M. Brooks,
G. D. Phippen.

MEMBERS ELECTED.

Samuel Chamberlain, James E. Trask, Sidney Winslow and Elbridge Baker, all of Salem, were elected members.



REGULAR MEETING, MONDAY, MAY 20th, 1872.

THE PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From E. W. Buswell, Boston, May; J. J. H. Gregory, Marblehead, May 10; Augustus Mudge, Danvers Centre, May 4; W. Neilson, May 10; Wm. Northey, May 13; George Peabody, May 11; M. A. Stickney, May 14; John A. Vinton, Winchester, May 9.

The LIBRARIAN reported the following additions:—

By Donation.

BUTLER, B. F., M. C. Ellis's Speech in U. S. H. R., Apr. 30, 1872. Butler's Speech in U. S. H. R., Apr. 18, 1872. Report of the Department of Agriculture for March and April, 1872. Dawes' Speech in U. S. H. R., May 3, 1872.

CLOGSTON, W., of Springfield, Mass. London Directory, 1857, 1 vol. 12mo. Ithaca and Oswego Directory, 1867-8. 1 vol. 12mo. Utica Directories, 1842-3, 1853-4, 1858-9, 1861-2, 1867-8. 5 vols. 12mo. Oneida County Directory, 1866-7. 1 vol. 12mo.

DEPARTMENT OF THE INTERIOR. Mortality of the U. S. for 1850, 1860, 1870. 4to pamph.

KIMBALL, JAMES. Miscellaneous pamphlets, 7.

LEE, JOHN C. Commercial Bulletin for May 11, 1872.

MANNING, ROBERT. Amateur Cultivator's Guide. 2 vols. 8vo. 1869-70.

WHEATLAND, STEPHEN G. Neill & Smith's Compendium of Medica. 1 vol. 8vo. Hooper's Physicians' Vade Mecum. 1 vol. 12mo. Darwin's Origin of Species. 1 vol. 8vo. Digestion and its Derangements. 1 vol. 8vo. Watson's Practice of Physic. 1 vol. 8vo. Bowman's Medical Chemistry. 1 vol. 12mo. Wilde on Diseases of the Ear. 1 vol. 8vo. Paget's Surgical Pathology. 1 vol. 8vo. Wood's Practice of Medicine. 2 vols. 8vo. London Lancet. 1 vol. 8vo. Hunter. 1 vol. 8vo. Carpenter's Principles of Human Physiology. 1 vol. 8vo. Dictionnaire de Médecine. 1 vol. 8vo. Dwight's Modern Surgery. 1 vol. 8vo. Book of Prescriptions. 1 vol. 12mo. The Prescriber's Complete Handbook. 1 vol. 12mo. Taylor's Medical Jurisprudence. 1 vol. 8vo. Sargent's Minor Surgery. 1 vol. 12mo. Copland's Medical Dictionary. 1 vol. 8vo. Beck's Materia Medica. 1 vol. 8vo. Wilson's Diseases of the Skin. 1 vol. 8vo. Mille's Practice of Surgery. 1 vol. 8vo. U. S. Dispensatory. 1 vol. 8vo.

WILLIAMS, HENRY L. Salem Gazette, 76 nos. Boston Shipping List, 1844. 1 vol. folio.

By Exchange.

PUBLISHERS. Gloucester Telegraph. Hardwicke's Science Gossip. Haverhill Gazette. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

Mr. JOHN ROBINSON exhibited an interesting collection of native plants in flower which he had gathered in this vicinity during the past few days, and made some remarks upon the same, indicating the localities, and time of blooming, which was several weeks later the present season than that of the average periods for some ten or twelve previous years. The following may be specified: *Sanguinaria Canadensis*, *Erythronium Americanum*, *Epi-gæa repens*, *Thalictrum anemonoides*, *Anemone nemorosa*, *Thalictrum dioicum*, *Viola pedata*, *Viola pubescens*, *Viola sagittata*, *Viola blanda*, *Houstonia cærulea*, *Arisæ-*

TABLE CONTAINING THE DATES OF THE FIRST FINDING IN FLOWER OF SOME OF OUR NATIVE VERNAL PLANTS.

	1856	1857	1858	1859	1861	1862	1864	1865	1866	1867	1868	1869	1870	1871
<i>Anemone nemorosa</i> , Wind Flower,.....	Apr. 30	Apr. 22	Apr. 12	Apr. 19	Apr. 27	.....	Apr. 27	Apr. 14	Apr. 23	Apr. 25	Apr. 24	Apr. 23	Apr. 25	Apr. 23
<i>Aquilegia Canadensis</i> , Wild Columbine,.....	May 15	May 11	May 7..	May 12	May 10	.....	May 5..	.....	.....	.....	.....	.....	.....	.....
<i>Aralia trifolia</i> , Dwarf Ginseng,.....	May 18	.....	May 21	May 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Aurethusa bulbosa</i>,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Cornus Canadensis</i> , Dwarf Cornel,.....	.....	June 1.	June 1.	May 20	May 28	.....	May 30	.....	June 9.	June 5.	June 12	May 31	June 2.	May 28
<i>Cypripedium acaule</i> , Ladies' Slipper,.....	May 25	June 1.	May 29	May 20	May 28	.....	June 1.	May 21	May 30	May 28	June 3.	June 6.	May 26	May 26
<i>Epigaea repens</i> , Trailing Arbutus,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 23	Apr. 26	Apr. 16
<i>Erythronium Americanum</i> , Dog's Tooth Violet,.....	Apr. 10	Apr. 3.	Apr. 15	Apr. 15	Apr. 21	Apr. 20	Apr. 24	Apr. 8..	Apr. 23	Apr. 16	Apr. 24	Apr. 25	Apr. 25	Apr. 23
<i>Hepatica triloba</i> , Round-leaved Hepatica,.....	Apr. 10	Apr. 3.	Mch. 28	Mch. 19	Mch 10*	Apr. 6..	Mch. 20	Mch. 19	Mch. 21	Apr. 4..	Mch 29†	Mch. 28	Jan. 27	Mch. 11
<i>Kalmia latifolia</i> , Laurel,.....	June 20	.....	June 20	.....	.....	.....	June 18	June 10	June 12	June 10	June 28	June 27	June 20	June 13
<i>Nymphaea odorata</i> , Water Lily,.....	July 17	July 7.	July 4..	.....	.....	.....	.....	.....	June 28	July 1..	July 13.	July 19.	July 7..	June 24
<i>Oldenlandia purpurea</i> , Bluets, Houstonia,.....	Apr. 30	Apr. 20	Apr. 17	Apr. 19	Apr. 27	Apr. 26	Apr. 19	Apr. 2..	Apr. 25	Apr. 21	.....	.....	.....	.....
<i>Sanguinaria Canadensis</i> , Bloodroot,.....	.....	Apr. 12	Apr. 7..	Mch. 31	Apr. 18	Apr. 24	Apr. 15	Apr. 2..	Apr. 20	Apr. 16	Apr. 19	Apr. 10	Apr. 10	Apr. 6.
<i>Sarracenia purpurea</i> , Side Saddle Flower,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Smilacina bifolia</i> , Two-leaved Solomon's Seal,.....	May 25	June 1.	June 4.	.....	.....	.....	May 31	May 21	May 28	June 5.	June 12	June 1.	June 24	May 28
<i>Trientalis Americana</i> , Star Flower,.....	May 22	June 1.	May 29	May 20	May 24	.....	May 31	May 16	May 20	May 25	June 6.	May 25	May 22	May 21
<i>Uvularia sessilifolia</i> , Sessile-leaved Bellwort,.....	.....	May 9..	May 8..	May 4..	May 5.	.....	May 5..	.....	.....	.....	.....	.....	May 18	May 21

* Mch. 24, snow two feet deep.

† Two flowers. Snowstorm. 19 plants.

‡ Found two yellow ones.

ma triphyllum. He presented the accompanying table — containing the date of the first finding in flower, the several species enumerated therein — compiled by one of our enthusiastic collectors, the results of his observations for the past fifteen years.

MR. GEORGE D. PHIPPEN spoke of some of the localities which he was wont to frequent, in years long past, in search of our native plants, and which are now occupied by dwellings or manufacturing industries. He alluded briefly to the great change that had taken place in the immediate suburbs of the city.

REV. E. C. BOLLES remarked, that a day or two before, he had listened to a lecture by Prof. Asa Gray on the Fertilization of Plants by the Agency of Insects, and that several of the wild-flowers on the table had served as illustrations. Among these was the *Houstonia*, of which there had long been known to be two kinds of flowers. The first had stamens projecting above the dwarfed pistil, while in the second the stigmas were carried up far beyond the anthers. The members of the Institute would see both kinds pretty equally represented in the tufts of flowers before them, distinguishing these by observing that in some flowers they would see only the two stigmas, in others only the four anthers projecting from the throat of the corolla. So the *Houstonia* had been said to have *dimorphous* flowers, but the reason for this variation had not been understood till an explanation had been sought in the possibility of an artificial fertilization. It was now seen that the pollen of any *Houstonia* blossom did not fertilize the ovules of the same flower. In the case of the flowers with extruded stigmas, this could not occur unaided, because the stamens were deeply sunk in the

corolla—while in the other kind the pollen would not be found to exert a fertilizing effect upon its own stigma. But the two kinds of flowers were exquisitely arranged to produce cross-fertilization. An insect, exploring a corolla where the anthers were at the bottom, would cover its proboscis with pollen, which would be carried to the depressed stigma of the other kind of flower, and while visiting that second flower, the insect's head would remove some of the pollen, which again it would leave on the exerted stigma of a third flower of the kind first plundered. The structure of these flowers is to be explained in Prof. Gray's book, just passing through the press, entitled "How Plants Behave."

Mr. J. H. EMERTON mentioned that in November last he dug a root of *Batrychium dissectum* from an open pasture, and in January set it down with other ferns in a glass case. In about two months it produced a new frond with the usual triangular outline, but nearly twice as large as the old ones, and with the divisions of the pinnæ almost entire. The next frond, which grew in another month, was of the ordinary kind. It afterward produced in succession three fronds five or six inches long, with pinnæ in pairs over an inch apart toward the base, and with their divisions almost entire, looking very much like small sterile fronds of *Osmurida Claytoniana*.

Mr. F. W. PUTNAM gave an account of the explorations of several members of the Institute at Jeffries' Neck, in Ipswich, on Friday last.

The researches were undertaken for the purpose of ascertaining if a large number of depressions, in two groups, about a mile apart, were graves of Indians, as had been supposed. After carefully digging into several

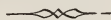
of the places and getting to the original bottoms of the holes, it was evident to all present that they were not graves, and though a few stone implements and pieces of Indian pottery were found in the course of the excavations, there was nothing by which the original makers of the holes could be determined beyond doubt as Indians, though unquestionably the holes had been dug years ago by some race of men, and perhaps by the Indians for some temporary purpose. During the digging an old clay pipe bowl, of the pattern used by the first settlers, was found, indicating that perhaps the depressions were of a comparatively recent date, though the pipe might have been lost at a time following the original working, as it was found only a few inches below the sod.

One of the most interesting results of the explorations was the finding by Mr. Goodell of a well marked piece of Indian pottery in the gravel bank about three feet below the surface. This piece of pottery was seen, and the spot from which it was taken carefully examined, by several of the party, and it was unquestionably carried into the bank of gravel at the same time the bank was formed, and not buried there, as the gravel was undisturbed and the fragment of pottery by itself. The only question is as to the age of the gravel deposit, whether original river drift, or wash from the hills above at a more recent time, though even if of the later date it would prove of great antiquity.

Mr. Putnam exhibited a plan, made by Mr. J. H. Emerton, of one of the groups of depressions, showing their relative positions, and also a section of one of those opened. A sketch, showing the clearing which had been made by taking away all the large stones from the vicinity, and the relation of the depressions to the surrounding country, was made by Mr. C. A. Walker.

Mr. Putnam was followed by remarks from Messrs.

Goodell, Kimball, and others. After an interesting discussion on these and other subjects suggested by the above topics the meeting was adjourned.



REGULAR MEETING, MONDAY, JUNE 3, 1872.

PRESIDENT in the chair.

Samuel Calley of Salem and George E. Lewis of Peabody were elected resident members.



FIELD MEETING AT MIDDLETON, WEDNESDAY, JUNE 12TH, 1872.

THE RAMBLE.

THE Institute, in arranging the series of Field Meetings, the present season, decided to commence at Middleton and to accept the kind invitation of Mr. Simon F. Esty to use his grounds as the place of rendezvous for the day. Thither the party, on alighting from the cars of the Lawrence Branch of the Eastern Railroad, at the Middleton station, about two hours before noon, wended their way, and found a beautiful walnut grove well adapted for the purpose of rural excursions, situated on the borders of a large pond formerly known as "the Great Pond," but now designated "Forest Lake."

From this place the several parties, after depositing their baskets, etc., went in different directions as inclinations dictated; some upon the pond, boats being in readiness for the purpose, others rambled through the grove

and adjoining woods, or betook themselves to some of the pleasant by-paths that here abound, and are more or less skirted with shrubbery and the flowering plants that appear and disappear, in succession, with the advance of the season. Many of these by-paths were undoubtedly the primitive roads constructed by the early settlers, from house to house, without any definite plan, merely for their own personal convenience. When the villages and towns sprung up requiring better and more direct means of communication, other roads were constructed and these were soon abandoned; the people accordingly changed their places of residence and built other houses; the old ones being neglected soon fell into decay. One occasionally meets in rambling through the woods and following the devious windings of some of these old by-paths or cross-roads the remains of an old cellar, the gnarled apple tree near by, a few plants that always linger in the footsteps of man, and perhaps the old well in the midst of dense woods and forests. Nature soon usurps her sway and clothes with rich verdure the places that man ceases to cultivate.

This diversity of the surface into hills and dales, with the various brooks and ponds interspersed, adds to the beauty of the scenery and greatly contributes to the pleasures of rural walks. Through the kindness of Mr. David Stiles, several of those interested in antiquarian lore were enabled to see specimens of the old houses, two stories front with a lean-to in the rear, that have braved the blasts of some two hundred winters, also the burial places where the forefathers of the hamlet sleep with their names inscribed upon the simple stone that marks the spot of interment. Mr Stiles directed attention to other objects of historical interest; some of these will be alluded to in the afternoon session. Middleton has two railroads located within its territory, one from Salem to Lowell in the extreme

western part at the paper mill, the other from Salem to Lawrence through the central part near the village. The occupation of the inhabitants is largely agricultural; though the manufacture of shoes and paper is carried on to considerable extent.

After partaking of the repast at the grove the party proceeded to the church, where the afternoon session was held, commencing at 3 P. M. The PRESIDENT in the chair.

AFTERNOON SESSION.

Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From F. S. Drake, Boston, May 11; Simon F. Esty, Middleton, May 28; H. Hagen, Cambridge, May 6; A. Lackey, Haverhill, June 4; James Niven, Saugus Centre, May 22; W. S. Perry, Geneva, N. Y., May 20; A. A. Scott, Saugus Centre, May 24; W. P. Upham, May 14; Durkheim, Naturwissenschaftlicher Verein der Rheinpfalz, Feb. 7; Gottingen, Die K. Gesellschaft der Wissenschaften, Jan. 10; Saint Petersburg, Academie Imperiale des Sciences, Ap. 29; Thronhjelm, Société Royale des Sciences et des Lettres, Aug. 16, Dec. 12; U. S. Dep. of Interior, May 14.

The LIBRARIAN reported the following additions :—

By Donation.

BROOKS, HENRY M. Corry's Life of Washington. 1 vol. 12mo. Juvenile Lyre. 1 vol. 8vo. Life of Marion. 1 vol. 12mo. Bibliotheca Historica. 1 vol. 8vo.

BRYANT, JAMES S., of Hartford, Conn. Register for the State of Conn. for 1790. 16mo. Flint's Discourse on Washington. 8vo. Proudfit's Sermon. 8vo.

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The SUPERINTENDENT of the Museum reported :—

From Miss J. R. COLBY, a Fire Set, taken from the ruins of the house of Mrs. Mulliken, burned by the British at the Battle of Lexington, April 19, 1775.

FIRST FIELD MEETINGS—DR. WILLIAM STIMPSON.

THE PRESIDENT in his opening remarks alluded to the coincidence of this day being the twenty-third anniversary of the first Field Meeting, which was held in the neighboring town of Danvers, on June 12, 1849. Some twelve or fifteen members in private carriages assembled at the Plains, and under the guidance of our old friend, Dr. Andrew Nichols, visited the locality of the *Vaccinium vitis-idea* first discovered by William Oakes in 1820—this plant is seldom found growing elsewhere within the limits of Massachusetts. The sphagnous borders of Cedar Pond in Wenham were also visited and there was detected the *Andromeda polifolia* just passing out of bloom. Thence repairing to Berry's Tavern at the Plains, the afternoon was devoted to explaining and illustrating by the microscope (a constant accompaniment at these meetings) the structure and economy of the lower algæ, fungi, lichens, etc. The second meeting, a few weeks later, was held at the residence of A. T. Newhall in Lynnfield. There were present with us on this occasion, Messrs. F. Alger and C. T. Jackson of Boston, and Seaman of Germany. Ship Rock and the serpentine ledges in Lynnfield were visited, and at the afternoon session furnished topics for discussion. The third, on the 28th of August following, was at the seashore on Burley Smith's farm in Manchester. Some visited the woods of Essex and Manchester where Cutler and Oakes, in years long past, were

wont to herbarize ; a few spent the time in dredging along the adjacent shores, a boat having been sent from Salem for this purpose. The visitors on this occasion were Mr. C. Girard, an assistant of Prof. Agassiz, and a young man named Stimpson, hailing from Cambridge, and not then out of his teens. Acquaintance had been made with Mr. Stimpson, a week or two previous, during a trip in the steamer R. B. Forbes from Boston to Salem, with members of the American Association for the Advancement of Science, who were visiting Salem, on the day after the adjournment of the session at Cambridge. Dredges having been put on board, at the suggestion of Professor Agassiz, were used occasionally during the trip.

Let us consider in this connection the subsequent career of this young man, the notice of whose death at Ilchester, near Baltimore, on the 26th ult., has been so recently announced. That trip from Boston to Salem was his first experience in dredging, a novelty to him, and he was much interested in this pursuit. He visited Salem several times during that autumn, and accompanied me on dredging excursions in the harbor. The results of his gleanings on these occasions formed the basis of a series of observations which were embodied in a work on the New England Shells, published in 1851—his first introduction to the scientific world as an author. This was soon followed by a paper on the Marine Invertebrates of Grand Menan, published in 1853, under the auspices of the Smithsonian Institution, and has since been considered as the first authority in the marine zoology of that region. He then spent several years in the North Pacific, Japan, etc., as naturalist to Government Expeditions and made vast collections, principally the results of dredging in those seas. He then resided for some years at Washington, in the quiet prosecution of his investigations, and the publica-

tion of their results. When the late Robert Kennicott went to Alaska, in 1865, in the employment of the Russian Telegraphic Expedition, Dr. Stimpson removed to Chicago to assume the duties of Secretary of the Chicago Academy of Natural Sciences, and maintained that connection until his death. During that interval he visited Florida on several occasions, and always obtained numerous interesting collections for the Academy.

Dr. Stimpson ranked high as a scientific investigator, his researches were thorough and his descriptions clear and accurate. He has added a large number of new species to the list of marine animals, the detailed account of which, forming many zoological monographs with illustrations nearly ready for the press, were destroyed by the Chicago fire as were also the types of his species. This great loss, the result of his labors for twenty years, affected him severely and influenced very much the state of his health.

The past winter Dr. Stimpson was engaged on board the U. S. C. S. steamer *Bache* in superintending dredging between Cape San Antonio, Cuba, and the coast of Yucatan and thence to Key West—but his increasing infirmities prevented him from fully carrying out his plans—returning not long since to the residence of his father-in-law near Baltimore he became gradually worse and died, as before noticed, on the 26th of May.

It seems appropriate, at this time and on this occasion, to allude to the decease of Dr. Stimpson, especially from the fact that he received his first experiences in the uses and results of dredging at one of these outdoor meetings, and that after the lapse of more than a score of years a life, then at its commencement, closes so full in the performance of scientific work and having done so much for the promotion and diffusion of science in this country.

Mr. F. W. PUTNAM alluded to the high position which Dr. Stimpson had taken in the ranks of science, and to the esteem in which he had always been held by those associated with him, and closed by proposing that a committee be appointed by the Institute to draw up a series of resolutions expressive of the loss which it had sustained. The committee, consisting of Messrs. Putnam, Bolles, Johnson and Wheatland, afterwards reported the following resolutions, which were unanimously adopted, and it was voted that a copy be sent to the family of Dr. Stimpson, and to the Chicago Academy of Sciences.

Resolved: That the Essex Institute has learned with profound regret of the recent death of Dr. William Stimpson, who has for so long a time been distinguished as the foremost American student in Marine Zoology, and whose loss to science is the greater since it has occurred in the midst of his successful labors to restore the fortunes of that Institution which has owed so much to his eminent attainments.

Resolved: That even in the grief which this severe affliction causes, the Essex Institute cannot but remember with pride that Dr. Stimpson's first acquaintance with the department of investigation which he afterwards pursued to such results, was made under its own auspices, and that the records of its Field Meetings for 1849 will preserve the honorable memorials of this beginning of his fame.

Resolved: That the Secretary of the Institute be instructed to convey, by these Resolutions, to the family of Dr. Stimpson and to the Chicago Academy of Sciences, not only the assurances of the high appreciation in which its members hold the scientific acquirements and labors of their lamented friend, but also their earnest sympathy with his relatives in the sorrow of their bereavement.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4.

SALEM, MASS., JULY, 1872.

No. 7.

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FIELD MEETING AT MIDDLETON, WEDNESDAY,
JUNE 12TH, 1872.

[*Continued.*]

THE EARLY MEETINGS OF THE SOCIETY.

MR. S. P. FOWLER, of Danvers, one of the original members of the Society, gave an interesting retrospect of its early history, and narrated many incidents of its first meetings, alluding especially to the one held in Topsfield on Wednesday, the 16th of April, 1834, in furtherance of the object and to complete the organization by the appointment of committees, etc. Specimens in the various branches of Natural History, with apparatus for collecting, were exhibited and illustrated, and the modes of preservation of the same, with a view to the formation of a Museum were discussed by William Oakes of Ipswich, Dr. Andrew Nichols of Danvers, and others. These two gentlemen may be justly regarded among the pioneers of science in this community, and the present generation are now reaping the fruits of their labors and their example in this direction ;

they have long since been gathered to their fathers. Mr. Oakes died on the 31st of July, 1848, a noted and enthusiastic botanist; Dr. Nichols, a valued physician, and one particularly conversant with our local geology and botany, March 31, 1853, just as the little *Draba verna*, a plant of which he always delighted to make mention and collect specimens, was expanding its tiny petals to another vernal season. He also spoke of the field meetings in Danvers and Lynnfield during the summer of 1849 and the great interest which Dr. A. Nichols, Mr. Thomas Cole of Salem, Dr. George Osgood of Danvers and others took in this movement for the promotion of science.

HISTORICAL NOTICES OF MIDDLETON.

DAVID STILES of Middleton being called up, said he proposed to say something about the beautiful pond (on the shores of which the society had this day taken their repast), and two of the earliest settlers. Boston was settled in 1630 and four years subsequently Newton people under the care of Richard Bellingham, Esq., of Boston (afterwards Gov. of the Colony), moved to Cochichewick (Andover) and settled on the fish brook leading from the Great Pond to the Merrimac River. This small colony was exempt from tax and had the direct care of an agent, a compensation for the privations and dangers of an unprotected company in the midst of savages and in the wilderness. Bellingham must have passed to and fro within a mile of this pond in Middleton. None of the towns west of this were then settled and the roads at that time were through Danvers, Topsfield and Boxford, to old Rowley then called Salem Newmeadows, and Rowley Village. Bellingham's keen eye found this pond, and in 1639 obtained a grant for about twelve hundred acres which contained the pond and at that time an Indian plantation (relics and

skeletons of the Indians are still found in this locality). In 1659 Bellingham sold this claim to Bray Wilkins whose descendants (some of them) are before me to-day. Wilkins was from Wales, came over in one of Gov. Endicott's vessels and tended a ferry in Lynn fifteen years before settling in Middleton. This was in 1660, one year after purchasing these lands. His dwelling was on the southeast side of the pond and protected from the cold winds by Wills Hill on the north. His family consisted mostly of boys who took up a large portion of this claim and erected dwellings thereon for themselves, and this accounts for this name being more numerous in our early history than any other. Wilkins attended church at Salem Village, of which this town was a part, under the pastorate of Rev. Samuel Parris, in 1692, at the time of the witchcraft, and one of his grandsons was a victim.

In 1663 Thomas Fuller from Woburn bought a claim of Maj. General Dennison, lying east of Bellingham and parallel with it, and erected his dwelling just south of this church on the site now occupied by the house of Mr. Abijah Fuller. Thomas Fuller was a blacksmith by trade. He had quite a number of sons who also settled on his lands and for some years these two families must have been the principal ones in this part of the town.

In 1728 these people obtained a charter from the Great and General Court for a town. It enjoined upon the inhabitants the settling a minister and hiring a schoolmaster to teach "ye young to read and write." Consequently they settled Andrew Peters, and hired Daniel Towne as schoolmaster. Peters was from Andover, son of Samuel Peters and a graduate of Harvard College, in the class of 1723. The charter was presented to the town by Lieut. Thomas Fuller, designated as one of the principal inhabitants, who, at that period, must have been between ninety

and one hundred years old, and we are assured of this fact by his excellent, though very tremulous, handwriting.

The spot where the town met to receive their charter was at the house of Dr. Daniel Felch, a few rods east of the present church and the dividing line between Salem and Rowley. The meeting-house, though raised at that time, was not covered; it seems, therefore, that the town had been some time preparing for an existence (the population at that time was about four hundred). About thirty years ago I bought and took down this old meeting-house of massive timbers, all oak, most of which squared ten by thirteen while underneath I found oak stumps hewn away to receive the floor timbers which measured over four feet in diameter.

In conclusion, I thank this Society for the interest they have awakened in this county in searching for these hidden treasures, which to the antiquarian, and indeed to all coming posterity, are of so much value.

Mr. A. C. GOODELL, Jr., of Salem, spoke of his pleasant visit during the forenoon to several places of historical interest in the town, especially to the spot alluded to by Mr. Stiles, where the act of incorporation of the town in 1728 was first openly proclaimed, being read by the Sheriff. He then read a copy of the act.

INDIAN RELIC.

Mr. D. J. TAPLEY, of Danvers, described a curious and interesting sculptured stone which was discovered recently at Meredith Village, N. H. The stone was found embedded in clay and deposited in the sandy soil at the head of Lake Winnipiseogee, at a depth of two feet. On carefully removing the coating of clay, an egg-shaped "gorget" was found, having a tapering hole through its longest

diameter and measuring three and seven-eighths inches in length by two and five-eighths in thickness. The material is a silicious sandstone, of a drab color and fine grain, and the sculptures are of a much higher grade of art than any of a similar class extant. The surface of the stone is smooth, and as perfect in contour as if turned in a lathe. The carvings are in bas-relief, on a ground sunk in this surface.

On one side of the stone is a face in relief, similar in its general features to the Mexican and Indian "Masks." On the opposite side is a representation of arrows in various positions, a new moon, and a convolute, or coil, which may represent a serpent. On the third side is a wigwam and a circle supposed to represent the full moon, and on the fourth an ear of corn and a depressed circle containing pictures of the head (?) of some animal, a deer's leg, and a crown(?).

The stone was found by Mr. Seneca Ladd of Meredith Village at the bottom of a post hole which some of his workmen were excavating. As Mr. L. is quite a naturalist, the discovery was hailed by him with enthusiasm, and the relic will be preserved with the greatest care. The discovery is regarded as one of great importance in its archaeological bearings.

Mr. F. W. PUTNAM remarked that the description of the carved stone given by Mr. Tapley had greatly interested him, especially as the carving was shown by Mr. Tapley's drawings to be far more elaborate than anything he had known as the work of the earlier inhabitants of New England. The Mound Builders of the South and West were good workers in stone, and often made quite elaborate carvings, but the later race of Indians were not much skilled in the art, and but few relics of their work

had been found. On this stone, however, we had the characteristic Indian face, similar to the few others that had been found in New England, with an attempt at an artistic result in the finish of the stone and the other figures carved upon it, that would certainly lead us to infer that its maker, if an Indian, was of a far higher caste as an artist than the distorted and childlike outlines of animals and men ordinarily cut or painted by them have heretofore impressed us as possible, and were it not for the fact that the face is so similar to undoubted Indian representations of the human face, which we have from New England, he would be inclined to think that it might have been the work of some other race. The position in which the stone was found marked it as quite an ancient piece of workmanship, and from its shape and the fact of its having a hole through its centre, he believed it would be classed with the singular perforated stones called gorgets, found throughout the country, and always more or less elaborately finished, which were supposed to have been worn on the breast as an ornament or badge of office.

Mr. JAMES H. EMERTON of Salem in speaking of the

SPIDERS AT MIDDLETON

said that while going about the shallow parts of the pond in a boat we saw a large number of spiders, most of them of the genus *Tetragnatha*, on the sedges entirely surrounded by water. They were standing head down with their feet stretched out up and down the leaves and could hardly be distinguished from their withered tips. One of these spiders found on an alder bush overhanging the pond was disturbed. It dropped and ran along on the water without wetting its body until it reached a water plant. These spiders are usually found near water but he had

not before seen them run on the surface although it is a common habit with several other species.

MICROSCOPIC FUNGI.

Rev. E. C. BOLLES of Salem said that if there have been but few flowering plants collected for consideration, almost every one must have remarked, perhaps without knowing what they were, two curious vegetable growths which were largely represented among the specimens upon the table. The roads about Middleton are bordered with a great abundance of Berberry bushes and Blackberry vines; and all of the former and many of the latter exhibit vegetable parasites in profusion upon their young foliage. These parasites are microscopic fungi only visible to the naked eye in the mass. The specimens before the meeting represent two divisions of the great family of the fungi, named *Coniomycetes* or *Dust-fungi*, because the most evident character about them is their powdery spores.

The Berberry bushes have a large proportion of their leaves spotted with numerous yellow discolorations. These are found to proceed from clusters of points which roughen the under surface. Microscopic examination shows each point to be a short cylinder thrust up through the cuticle of the leaf, and having its upper edge cut into teeth or segments, which are turned over the outside very evenly. Each cup contains many rounded translucent grains, and as the cup with its frill is white and the grains a rich yellow, the whole makes a very beautiful object for the microscope. The cells are clustered together—hence the common name, Berberry Cluster-cups (*Æcidium Berberidis*). The yellow grains are the spores and with the cups form the fructification of the plant. The rest of its structure as in all fungi is represented by the *mycelium*, or mat of white fibres, which pervades the tissue of the leaf.

In the case of the Blackberry vines, the leaves seem thickly and completely coated on the under side with a powdery orange-colored material. So brilliant is it that a plant so infected is a very striking object by the roadside. On looking more closely, we see that the color is in patches, which, in their tendency to become confluent, have spread over nearly the whole surface of the leaves. The orange material seems to have burst from under the cuticle, as the cluster-cups did. But there are no cups nor cells, only a mass of naked, rounded spores. This is a *Rust*, the *Uredo Potentillarum*; and is found on many plants of the Rose family. The mycelium of the fungus is hidden in this plant as in the other.

Both of these fungi are very common species here. Two features of interest may be noted. First, the immense number of spores, showing the resources of these minute plants. By the dispersion of these germs, widespread injury to the farmers' crops is often done by other species of Rusts, etc. Then again, these Berberry and Blackberry leaves are in many cases hardly unfolded, and yet almost immediately covered with the fungi. This shows that the plant itself is so infected, that year after year, in renewing its own foliage, it renews the parasitic growth as well.

Dr. A. H. JOHNSON of Salem and Rev. L. H. Frary of Middleton being called upon made some interesting remarks upon the object of these meetings and the beneficial influences that may arise therefrom in the promotion of science and general culture in the community.

SCIENTIFIC LECTURES.

The Committee on Lectures reported, that arrangements had been made (subject to the confirmation of the Institute) with Rev. E. C. Bolles of Salem, and Mr. E. Bicknell

of Salem as assistant, to deliver forty lectures "on the microscope and what it shows us" illustrated by the calcium light, in such places in Essex County as may be agreed upon during the year commencing July 1, 1872, eight of them to be given in Mechanic Hall, Salem, on successive Wednesday evenings commencing on the third Wednesday in October.

Voted, To accept the report of the committee, and confirm the doings.

David Weston of Salem was elected a resident member.

Voted, That the Essex Institute hereby tenders its hearty thanks to Mr. Simon F. Esty of Middleton for the use of his beautiful and commodious grove, to the Proprietors of the Congregational Church in which this session has been held and to Messrs. David Stiles, Henry White, Merriam, Tyler and others of Middleton who have extended courtesies on this occasion.

Adjourned.



FIELD MEETING AT GROVELAND, TUESDAY,

JULY 16, 1872.

Soon after nine o'clock on the morning of Tuesday, 16th of July, a goodly number of persons began to assemble in the Eastern Railroad Station, Salem, for an excursion to Groveland, taking the 9.25 train for Danvers on the Essex Road, thence a special train on the Danvers and Georgetown, now leased and operated by the Boston and Maine Railroad corporation, the remainder of the route.

The additions to the party from other towns at the several stations considerably augmented the number in attendance. On arrival at Groveland the party was met

by several of the citizens, and proceeded to the new building recently erected through the efforts of the venerable Dr. Jeremiah Spofford, on the site of the Merrimac Academy which was destroyed by fire some two or three years since, where a preliminary meeting was organized. The President, after briefly alluding to the nature of the gathering, and expressing the hope that the day's excursion might be pleasant and instructive to every participant, introduced Dr. Spofford who extended a cordial welcome and described the location of the groves, streams, paths, hills and other objects of interest that were accessible during the forenoon's ramble; when he closed, the party adjourned and went in groups to the various localities pointed out, as inclination dictated.

This building is arranged for a lecture room on the second floor, and on the first, several smaller rooms for a public library, reading room, and other purposes. May the praiseworthy efforts of this venerated friend be fully and speedily carried out, and may he long live to witness the benefits of a good educational institution, ably sustained by the liberality of the friends of true progress and tending largely to promote the culture of the citizens of his native town.

THE NEW IRON BRIDGE.

The great bend in the Merrimac river between Groveland and Haverhill has made the crossing, at this place, from the early days of the settlement highly desirable. Before the construction of the bridges, the ferry at this point received always its fair proportion of travel. It is only recently that the residents in this section of the county have been favored with this great accommodation. This bridge was an object of great interest; it was built by authority of the Legislature (Acts 1870 chap. 219), and

under the direction of the county commissioners, over the Merrimac River near the site of the "Chain Ferry" in Groveland and connecting that town with Haverhill.

It was commenced March 29, 1871, under the superintendence of Col. Coffin of Newburyport. The stone piers, which are the handsomest on the river, were designed by Mr. C. A. Putnam of Salem, and built by Messrs Blaisdell and Parker, the former of New Hampshire and the latter of Rockport. The superstructure was built by the King Iron Bridge Co., of Cleveland, Ohio, and is an iron tubular bridge, light appearing and graceful in construction, but capable of sustaining a great weight. It has 804 feet of flooring, and is 25 feet in clear width. There are six spans, each 126 feet, and a draw of 68 feet, designed by Mr. C. G. Force, engineer of the King Company. The bridge is warranted to sustain a weight of 3,000 pounds to the lineal foot. It was tested and formally inaugurated on Wednesday, April 10, 1872, when one of the spans was subjected to a test of thirty tons, placed as nearly in the centre as possible, and the deflection was only thirteen-sixteenths of an inch. About 14 tons were put upon the draw with no further deflection than would be caused by the straightening of the chains.

The cost of the bridge may be summed up as follows :

For foundation, piers, etc.,.....	\$48,898.35
“ superstructure,.....	33,056.67
“ interest account,.....	3,007.68
	<hr/>
	\$84,962.70

and was divided between the county and the adjoining towns in the following proportions :

County of Essex paid twenty-seven-sixtieths,.....	\$38,233.22
City of Haverhill paid nineteen-sixtieths,.....	26,904.85
Town of Groveland paid eight-sixtieths,.....	11,328.36
Town of West Newbury paid six-sixtieths,.....	8,496.27
	<hr/>
	\$84,962.70

The day of inauguration may be considered one of the important events in the town's life ; a good proportion of the people were out, a collation was provided, and speeches ranging from grave to gay were warm in the approval of this object which has been a cherished one for many years to obtain.

In 1834, 1835 and 1836 petitions were forwarded to the Legislature for a charter to build a bridge at this locality, but the opposition of Haverhill, and more actively that of the Proprietors of Haverhill Bridge, prevented a favorable consideration. This source of objection is now removed, the several bridges over the Merrimac, hitherto controlled by private interests, have been laid out as highways by legislative action (see Acts 1867, chap. 296, and 1868, chap. 309), and the expenses incident thereto and of maintaining the same have been assessed by the county commissioners on the county and towns or cities most benefited.

HISTORICAL NOTICES.

The first bridge over the Merrimac at Haverhill was completed in the autumn of 1794 ; its erection was considered a marvel of mechanical skill and ingenuity. In 1795 the Merrimac Bridge at the Rocks connecting Haverhill with West Newbury was built, and was the longest over this river ; there being but little travel, the proprietors suffered it to fall to decay and in 1818 it was swept away by the ice. It was rebuilt in 1828.

These bridges have superseded the old ferries, the primitive mode adopted by our ancestors to maintain communication with those living on the opposite banks of the large rivers and to facilitate general travel.

An historical sketch of these old ferries with brief allusions to the many incidents connected therewith would embody many valuable facts and be a great contribution to

our local history. The records of the county and of several of our towns contain a mass of material on the subject that would amply repay a careful examination.

The ferries on the Merrimac near Haverhill have varied at different periods in number and location. The first on record was in 1647, Thomas Hale authorized to keep a ferry. In 1711, a ferry was established at Holt's Rocks between Haverhill and Newbury, and was kept for many years by John Swett, father and son, hence the name of "Swett's Ferry." In 1745, there were no less than five ferries between the village of Haverhill and Holt's Rocks: Swett's, at Holt's Rock; Cottle's, at the mouth of East Meadow River (Cottle's Creek); Pattee's near the House where David Nichols now or recently lived; Milliken's at the "Chain Ferry"; and Griffen's nearly opposite the central part of the city.

A ferry has been kept at the location of the New Bridge from 1738 to 1872, or 134 years, as a public landing; for more than one hundred years it had been a regularly attended ferry. About thirty years after the opening of Haverhill bridge, regular attendance was suspended; boats, however, have been kept by individuals for the conveyance of foot passengers.

Some of the party, who were interested in genealogical investigations, repaired to the old records; others, among whom was the author of a valuable memoir of one of the old families of the place, visited the location of several of the original grants of land to settlers from Rowley who first came hither in 1649. This territory at that time was known as "the Merrimac lands" and was within the township of Rowley. The first grants were bounded on the river (the river before the building of roads was the most convenient mode of communication), and extended back a considerable distance, some as far as the present

dividing line between Georgetown and Groveland. These were of different widths; the boundaries of most of them can now be easily ascertained, and any one acquainted in town can designate with sufficient accuracy the place where the first people lived, and the land they occupied. Although meetings of the settlers were probably held from the beginning, yet the first on record was on the 20th Feb., 1668-9. The name then given was Merrimac, afterwards called Rowley village on the Merrimac; Jan. 7, 1672-3, they voted to take the name of Bradford and incorporated under that appellation about 1675.

The first congregational church was constituted Dec. 27, 1682. Zachariah Symmes, a native of Charlestown and a graduate of Harvard in the class of 1657, was the first pastor, and was succeeded by his son, Thomas Symmes.

On the seventeenth of June, 1726, the town was divided into town parishes and this portion was set off as the East Precinct, and incorporated as a distinct municipality, March 8, 1750, under the name of Groveland.

The first parish meeting was held July 4, 1726; on the 8th of November following, Rev. William Balch was unanimously invited to preach with them; he was born at Beverly in 1704, graduated at Harvard College in 1724, ordained in 1728, and died January 12, 1792, aged 88—a descendant of John Balch, one of the old planters of Salem. He was succeeded by Rev. Ebenezer Dutch, a native of Ipswich, a graduate of Brown in 1776, ordained Nov. 17, 1779, died Aug. 4, 1813, aged 62. Rev. Gardner B. Perry was the third pastor, born at Norton, Aug. 9, 1783, graduated at Union in 1804, settled Sept. 28, 1814, and after a long and useful ministry died Dec. 16, 1859.

Balch's woods, extending along the banks of the Merri-

mac, is a delightful place in which to ramble, especially on a hot day, and to enjoy the beautiful scenery of the river and the opposite shore, with its undulating hills covered largely with wood in some localities, and in others with the city of Haverhill, thriving villages and cultivated fields; here also the naturalist can find much to study in his especial line of investigation. Several eminences nearly in the centre of the village were visited, and presented extensive views and cool and refreshing breezes.

At 1 P. M. the several parties repaired to the lower hall of the new building which was the place of gathering for the day, where the collation was partaken, the citizens furnishing delicious tea and coffee. The divine blessing was invoked by Rev. J. C. Paine of Groveland.

THE AFTERNOON SESSION

was called to order at 2 P. M. in the hall on the second floor. The PRESIDENT in the chair. Records of preceding meeting read:—

The SECRETARY announced the following correspondence:—

Boston Public Library, June 17; Geological Survey of India, Jan. 2; Maryland Historical Society, June 19; New York State Library, June 22; Rhode Island Historical Society, June 28; U. S. Dept. of Interior, June 18; Department of Agriculture, June 17, 20; Vermont Historical Society, July 9; Worcester Free Public Library, June 29; Mrs. W. B. Bannister, Newburyport, July 10; J. W. Foster, Chicago, Ill., June 25; John H. Gould, Topsfield, July 12; L. D. Gould, Boston Highlands, July 11, 13; S. C. Gregory, New York, June 13; C. J. Maynard, Ipswich, July 4; J. Spofford, Groveland, June 21, July 5, 8.

THE LIBRARIAN reported the following additions:—

By Donation.

BANNISTER, Mrs. WM. B., of Newburyport. Christian World, 60 numbers. Jewish Chronicle, 10 numbers. The Israelite Indeed, 43 numbers. Panoplist, 19 numbers. Miscellaneous pamphlets, 112.

BUTLER, BENJ. F., M. C. Carpenter's Speech in U. S. Sen., June 3, 1872. Logan's Speech in U. S. Sen., June 3, 1872. Flanagan's Speech in U. S. Sen., June 1, 1872.

DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C. Reports of Commissioners to Paris Exposition, 2nd Sess., 40th Cong., 1867-8, 6 vols. 8vo. Senate Documents,

2nd Sess., 40th Cong., 1867-8, 1 vol. 8vo. Reports of the Committees of the House of Reps., 3d Sess., 40th Cong., 1868-9, 1 vol. 8vo.. 2nd Sess., 41st Cong., 1869-70, 3 vols. 8vo. Patent Office Reports, 3d Sess., 40th Cong., 4 vols. 8vo. Senate Reports, 2nd Sess., 41st Cong., 1869-70, 1 vol. 8vo. Senate Journal, 2nd Sess., 41st Cong., 1869-70, 3 vols. 8vo. Commerce and Navigation, 1869-70, 1 vol. 8vo. Report of the Department of Agriculture, 1869-70, 1 vol. 8vo. Executive Documents, 2nd Sess., 41st Cong., 1869-70, 1 vol. 8vo. Mines and Mining, 1869-70, 1 vol. 8vo. Report of the Finance Committee, 1869-70, 1 vol. 8vo. Report of the Secretary of the Interior, 1869-70, 1 vol. 8vo. House Journal, 1869-70, 1 vol. 8vo. Report of the Secretary of the Navy, 1839-70, 1 vol. 8vo. Senate Journal, 1839, 1 vol. 8vo. Senate Documents, 1869, 1 vol. 8vo. Report of the Secretary of War, 1839-70, 1 vol. 8vo. Senate Reports, 1839, 1 vol. 8vo. House Miscellaneous 1839, 1 vol. 8vo. Claims of U. S. against Great Britain, 1869, 5 vols. 8vo.

FOLGER, WM. C., of Nantucket. Report of the Town of Scituate, Mch. 1871-Feb. 1872. Report of the Selectmen of the Town of Marshfield, 1872.

HOTCHKISS, SUSAN V., of New Haven, Conn. Fifteenth Annual Catalogue of the Officers and Students of the University of Rochester, 1834-5.

MUDGE, ALFRED, of Boston. Genealogy of the Mudge Family in America from 1638-1868 by donor, 1 vol. 8vo. Boston. 1838.

WESTON, DAVID. Miscellaneous pamphlets, 14.

WILDER, M. P., of Boston. Proceedings of the 30th Sess. of the American Pomological Society held in Richmond, Sept. 6, 7, 8, 1871, 4to pamph.

By Exchange.

GEOLOGICAL SURVEY OF INDIA. Observations on the Geology and Zoology of Abyssinia, 1 vol. 8vo. Records of the Geological Survey of India, Vol. iv, Pts. iii, iv, 2 pamphlets. 8vo. Memoirs of Geological Survey of India, Ser. vi, vii, 1871, 2 pamphlets, 4to.

NEW YORK GENEALOGICAL AND BIOGRAPHICAL SOCIETY. Record of, for July, 1872.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES. Proceedings of, Part iii, Oct., Nov., Dec., 1871.

PUBLISHERS. American Naturalist. Essex County Mercury. Hardwicke's Science Gossip. Haverhill Gazette. Ipswich Chronicle. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Salem Observer. Silliman's Journal. Western Lancet.

The SUPERINTENDENT of *Museum* reported the following additions to the Historical Collection :—

CRAIG, Mrs. SAML. A bottle with "C. B. 1715" stamped on it.

LITTLE, WM., of Newburyport. A old fashioned Mirror.

MUDGE, ALFRED, & SON, of Boston. A complete set of the Jubilee programmes, 1872.

U. S. OFFICE OF THE CHIEF SIGNAL OFFICER. Washington, D. C. Three copies of the daily weather Maps.

JAMES B. STONE. A pair of overshoes worn about the period of the Revolution.

L. H. Frary of Middleton, W. F. Southard, W. W. Kelman, Jr., and George K. Proctor, all of Salem, were elected resident members.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4. SALEM, MASS., AUGUST, 1872. No. 8.

One Dollar a Year in Advance. 10 Cents a Single Copy.

FIELD MEETING AT GROVELAND, TUESDAY,
JULY 16, 1872.

[*Continued.*]

THE PRESIDENT in his opening remarks alluded briefly to his first visit to Groveland, then the East Parish of Bradford, on Thursday, the 21st of September, 1837, a beautiful autumnal day, in company with a few friends, to attend a horticultural exhibition in the hall of the Merrimack Academy, and a meeting of the Essex County Natural History Society.

The collection of flowers was very fine and tastefully arranged, contributions were received from the gardens of the village and also from those of Salem, Newburyport, Haverhill and other towns. The attendance from the vicinity was large, the agricultural and other occupations being fully represented. A pleasing feature of the occasion was the appearance of the grounds* of the Academy

*The ground in front of the Academy was then a flower garden, wholly managed by Mr. Morse and his pupils, which, though entirely open and exposed, knew not the loss of fruit or flower!

laid out as a beautiful garden under the superintendence of Mr. Sylvanus Morse,* the Principal, for the amusement and gratification of the scholars, who not only culled from its gayly attired borders many choice flowers, but also gathered from the fields and woods, gerardias, asters, fringed gentians and many other attractive and showy flowers that add so much to the beauty of autumnal scenery. There was a goodly display of fruit and vegetables arranged on the tables. The exhibition indicated the great zeal in horticultural pursuits which was fostered by Mr. S. Morse, and Rev. G. B. Perry,† the pastor of the parish church. Both have passed away, but their memories survive and will long be cherished, the one as the faithful and beloved teacher, the other for the great interest which he always took in the various movements for the promotion of education, temperance, horticulture and other objects that tend to the general culture of the people, in addition to his usual professional duties which were always cheerfully and very acceptably performed.

In the afternoon a meeting of the Natural History Society, since incorporated as the Essex Institute, was held, Rev. G. B. Perry, one of the Vice Presidents, in the chair. The objects of the Society being fully stated called

*SYLVANUS MORSE, son of Joseph and Sophia [Bigelow] Morse of West Boylston, Mass.; born June 30, 1798; graduated at Brown University; married Harriet N., daughter of Dr. Jenks, of North Brookfield. He commenced teaching in Groveland in 1828 and continued for fifteen years, thence went to West Boylston and afterwards to Middleboro, Mass., where he died in 1871. His wife died in 1872 and both were buried in the cemetery at Groveland.

†Rev. GARDNER BRAMAN PERRY, D. D., son of Nathan and Phebe [Braman] Perry, was born at Norton, Mass., Aug. 9, 1783. In June, 1800, entered Brown University, continued there two years, and then went to Union College, where he graduated in 1804. For several years principal of Kingston Academy. Sept. 28, 1814, ordained at Bradford [Groveland] and was the sole pastor until 1851, when a colleague was appointed; he sustained the pastoral relation to the church until his death, which occurred December 2, 1859. He married, first, Maria P. Chamberlain of Exeter, N. H.; second, Eunice Tuttle of Acton; third, Sarah Brown of Groton, who survived him.

forth remarks from the presiding officer, the Secretary and others.

In the evening an instructive lecture was delivered in the church by the President of the Society, Dr. Andrew Nichols of Danvers,* "On the Advantages of the Study of Nature," which closed this interesting day.

After mentioning the meetings of the Institute held in this place in September, 1859, and June, 1860, and the cordial receptions extended on these occasions, he called upon Mr. E. S. Morse to give some account of his observations during the forenoon's ramble.

Mr. E. S. MORSE of Salem, after a few remarks on the findings of the day, gave a description of the insect which is the cause of the froth found on grass. This froth goes by the name of frog spit, and is supposed by many to be made by frogs, while others are aware that the substance in question is made by insects, but suppose the insects to be young grasshoppers. They are quite different from the grasshopper, belonging to an entirely different order. The creature causing this froth matures into a little wedge-shaped bug called leaf hopper, an hemipterous insect, the *Ptyelus lineatus* of Fitch. The eggs are deposited in the autumn, and are hatched in the following summer. In their larval or immature condition only are they surrounded by this frothy substance. It has been stated that these insects excrete their frothy covering, whereas they excrete a clear liquid, and blow it up afterward. This they accomplish by reaching out of the fluid their posterior segments and clutching, as it were, a drop of air, which they drag within the fluid holding it for a while against the under surface of the

* See page 89 of this volume; also Proceed. Essex Inst., Vol. i, page 49 and Vol. ii, page 26.

body, and then allowing it to escape in the fluid. This, repeated many times, converts the fluid into froth.

Dr. JEREMIAH SPOFFORD* was the next speaker. He retains his vigor in a remarkable degree for one who has reached fourscore and four years, and in his remarks gave an interesting account of the academy of which he was one of the founders, as follows:—

MERRIMACK ACADEMY.

Merrimack Academy originated in repeated conversations between the Rev. Dr. Perry, then pastor of this church, and myself, who now, after the lapse of half a century have devoted much of my time and care during the last year to rebuilding its ruined walls, destroyed by fire in September, 1870.

Dr. Perry and myself had then numerous families, in need of better advantages than the place afforded, and others were in the same situation, and some of us not well able to incur the expense of maintaining children at distant schools. These conversations resulted in the drawing up a paper by myself, which was headed by Mr. Perry, and followed by Dr. Benjamin Parker,† Capt.

* JEREMIAH SPOFFORD, son of Jeremiah and Temperance Spofford, was born at New Rowley [Georgetown] Dec. 8, 1787; married, Oct. 14, 1813, Mary Ayer, daughter of Deacon Eleazer and Mary [Flint] Spofford, of Jaffrey, N. H. First settled in Hampstead in 1813, a physician, and removed in 1817 to East Bradford, now Groveland, where he now resides, having continued in the practice of his profession fifty-five years. Author of a *Gazetteer of Massachusetts*, "*Reminiscences of Seventy Years*," a *Spofford Genealogy*, etc.

† BENJAMIN PARKER, son of Bradstreet and Rebecca [Balch] Parker, was born at Bradford [Groveland], Nov. 11, 1759; graduated at Harvard College in 1782; Dartmouth in 1812 conferred upon him the honorary degree of M. D. He practised medicine in Virginia about twenty years and returned to his native town in 1809, where he resided until his death, which occurred May 12, 1845. Married Hannah Moulton of Hampstead, N. H., in 1816; three sons.

George Savary,* Moses Parker, Esq., † William Greenough‡ and others, promising to pay certain proportions or shares, in the erection of a building for academy purposes.

The building was raised July 4, 1821, was finished and occupied for a school in November of the same year, consisting of about twenty-five scholars, male and female, mostly, but not wholly, of this place.

Mr. Stephen Morse,§ a native of the town and graduate at Dartmouth, was the first teacher, with a female department during the two summer terms, first taught a few weeks by Miss Harriet Wood,|| but most of the time of those and the two succeeding summer terms of the next year by Miss Mary Frothingham¶ of Newburyport, afterwards the wife of Rev. William Withington.

The school was no sooner in operation than application was made to the legislature for an act of incorporation, which was obtained, incorporating Rev. Gardner B. Perry, Dr. Benjamin Parker, William Greenough, Esq., Dr.

* Capt. GEORGE SAVARY, son of Major Thomas and Polly [Rollins] Savary, was born January 30, 1793, at Bradford [Groveland]. A boot and shoe manufacturer and trader; representative and senator of Massachusetts legislature. Married Louisa, dau. of Benjamin Balch of Salem. Died at Groveland, March 28, 1854.

† MOSES PARKER (son of Bradstreet and Rebecca [Balch] Parker) was born April 20, 1756. Trader and ingenious mechanic; did much for the academy and town. Died July 9, 1837.

‡ WILLIAM GREENOUGH, son of William; a trader and farmer; representative of Massachusetts legislature; born at Bradford [Groveland] Oct. 25, 1763; married Abigail Parker (sister of Benjamin Parker); died Oct. 7, 1851.

§ Rev. STEPHEN MORSE, son of Deacon Thomas and Rebecca [Cole] Morse, was born at Bradford [Groveland], Feb. 24, 1794; graduated at Dartmouth College, 1821; at Andover Theological Seminary, one year; married Martha, daughter of Dr. Jona. Kittredge of Salisbury; settled in the ministry at Merrimac and Troy, N. H., Biddeford, Me, and at Post Mills, Vt. In 1847, on account of ill health, retired to Thetford, Vt., where he died May 22, 1855.

|| HARRIET WOOD, daughter of Abner Wood of Newburyport.

¶ MARY FROTHINGHAM of Newburyport; a successful teacher; married Rev. William Withington, an Episcopal minister of Dorchester; died young.

Jeremiah Spofford, Ebenezer Rollins,* Phinehas Parker, † Capt. George Savary, and Capt. Samuel Tenney. ‡ Rev. Elijah Demond§ was named in the act, but declined the trust. Mr. Stephen Parker|| was elected trustee in 1824. Dr. Perry was president of the board thirty-five years, till his death; Dr. Spofford was secretary about twenty years, and president after Mr. Perry. Capt. Benjamin Parker, ¶ elected trustee, was secretary and treasurer nearly thirty years.

The school did not entirely sustain itself, in its early years, but all deficiency was made up by an annual assessment upon the trustees, resident in town, and on one occasion one hundred and forty dollars were paid, at an evening session, to square accounts, by a voluntary contribution by them alone.

Rev. David L. Nichols** was preceptor about two years. His health failing, Mr. John C. March, afterwards

* EBENEZER ROLLINS, son of Eliphalet and Patty [Sargent] Rollins; merchant in Boston.

† PHINEHAS PARKER, son of William and Hannah [Hardy] Parker; born at Bradford [Groveland] Dec. 3, 1783. In early life went into business in Boston; in 1827 retired and removed to Newburyport, and died at that place Oct. 7, 1850.

‡ Capt. SAMUEL TENNEY, son of Solomon and Betsey [Savary] Tenney, born Feb. 21, 1764; died April, 1828.

§ Rev. ELIJAH DEMOND, son of Israel Howe and Hannah [Henry] Demond, born at Rutland, Mass., Nov. 1, 1790; graduated at Dartmouth College in 1816; studied at Andover Theological Seminary; settled in the ministry at West Newbury, Lincoln and Princeton; married Lucy, daughter of Aaron Brown of Groton and has resided at Westborough, Mass.

|| STEPHEN PARKER, son of Daniel and Abigail [Bailey] Parker, born Nov. 11, 1783; married Mehitable, daughter of Wm. Palmer; a boot and shoe manufacturer and trader; representative of Massachusetts legislature; died Aug., 1861.

¶ Capt. BENJAMIN PARKER, son of Stephen Parker; trader fifty years; married Anne, daughter of Barker Lapham.

** Rev. DAVID LOWELL NICHOLS, son of Stephen and Martha [Robinson] Nichols, born at Amesbury, Mass., Apr. 12, 1794; graduated at Dartmouth College in 1816; teacher at Richmond, Va., Groveland and other places; studied divinity and was ordained but never settled on account of ill health; died at Kingston, April 22, 1829.

Rev. John C. March* of Belleville, succeeded in 1825, during one year. Dr. Alonzo Chapin, † afterwards missionary at the Sandwich Islands, and now physician at Winchester, Mass., taught one year. John Tenney, Esq., ‡ afterwards an attorney at Methuen, taught one term.

Mr. Sylvanus Morse, A. B., of West Boylston, commenced his valuable service in November, 1827, and sustained the school upon its own resources till April, 1844, seventeen years. Mr. Morse's long term was a great benefit to this institution and to the town, nearly all the children of the founders of the institution, and almost a whole generation of the young people of the town passed more or less time under his tuition, and were influenced by his wise instruction and gentle manners. Nor was the time passed here less pleasant to himself—his attachments were strong. It was his misfortune to lay his first-born son in our cemetery, and by their preference and direction, the earthly remains of himself and his amiable wife have been recently brought from a distant residence to rest by his side.

Mr. Benjamin Greenleaf, § many years preceptor of

*REV. JOHN CHARLES MARCH, born at Newburyport, Oct. 9, 1805; graduated at Yale College, 1825; settled over the Second Church in Newbury [Belleville Parish], March, 1832, and continued as the pastor until his decease in September, 1846.

†DR. ALONZO CHAPIN, a student of medicine; for several years a missionary at the Sandwich Islands; now physician at Winchester, Mass.

‡JOHN TENNEY, son of Shubael and Mary [Jameson] Tenney, born at Dunstable, Sept. 12, 1799; graduated at Dartmouth College, 1824; counsellor at law in Methuen; senator in Massachusetts legislature and executive councillor; married first, Mary Augusta, daughter of Bailey Bartlett of Haverhill; second, Augusta, daughter of Joseph and Lucy [Osgood] Sprague of Salem; died April 9, 1853.

§BENJAMIN GREENLEAF, son of Caleb and Susannah [Emerson] Greenleaf, born in the West Parish of Haverhill, Sept. 25, 1786; graduated at Dartmouth College, 1813. He resided at Bradford and was for many years a successful teacher and author of a series of arithmetics which for many years were largely introduced into the schools of New England and other states. He represented Bradford in the Massachusetts legislature in 1837, 1838 and 1839. He married Lucretia, daughter of Col. James Kimball of Bradford. He died Oct. 29, 1864.

Bradford Academy, kept one term, during the sickness of Mr. Morse, with much approbation.

Mr. Rufus C. Hardy,* a graduate of Dartmouth, sustained a useful and reputable school here from April, 1848, to 1860, upon the tuition received, which tuition was from three to five dollars a term, of three to four months, or less than twelve dollars a year, a small expense compared with the extra expense of board and travel, in supporting scholars at the distant schools, for which the public money is expended; in addition to losing the privilege of parental superintendence of children at home.

Miss Mary S. Frothingham, before named, Miss Sophia Perry,† sister of Rev. Dr. Perry, Miss Judith D. Peabody,‡ sister of the London banker, and Miss Hannah Parish,§ daughter of Rev. Dr. Parish, were successively and successfully employed in a separate female department till February, 1829, when, by vote of the trustees, a separate female department was discontinued. The town was much indebted to Mr. Hardy, and his sister, Miss Emeline Hardy,|| now deceased, for sustaining a highly useful school here for more than ten years.

During the successful operation of this academy it sent forth more than one thousand pupils, and we could often

*RUFUS CHANDLER HARDY, son of Phineas and Olive [Parker] Hardy, born at Bradford [Groveland] Feb. 18, 1814; graduated at Dartmouth College, 1842. He commenced teaching in the academy in 1848, and continued with success for ten years, living at the old homestead.

† SOPHIA PERRY, sister of Rev. Dr. Perry of Groveland.

‡ JUDITH DODGE PEABODY, daughter of Thomas and Judith [Dodge] Peabody, of Haverhill and Danvers, a sister of George Peabody, the distinguished London banker; born April 5, 1799; married, first, Jeremiah Russell of Georgetown, and second, Robert S. Daniels of Danvers; resides in Georgetown.

§ Miss HANNAH PARISH, dau. of Rev. Dr. A. Parish of Newbury.

|| OLIVE EMELINE HARDY, a sister of Rufus C. Hardy, was a graduate of and an assistant in the academy two years and teacher in the town schools nearly twenty years; died in 1871, aged 51.

count ten to thirteen of its graduates, natives of the town, in business as successful teachers, in this and the neighboring towns;* with a corresponding elevation of the habits and manners of the population. Now, with an amount spent for town schools fourfold what it then cost for them and the academy, in the vain attempt to make learned gentlemen and ladies of the whole community, we hear of no teachers from our town schools, and have a deterioration in our manners and morals which I have no disposition to portray.

The academy stood, and was useful for short terms of schooling and social purposes, till September, 1870, when it was destroyed by fire.

To the speaker, who then stood and now stands alone of the original board of trustees, and who had in younger life expended his utmost energies for its erection and support, and experienced and witnessed its usefulness, this was a sad and sickening sight.

Capt. Benjamin Parker was early elected a trustee, and in 1827 secretary and treasurer, and though an octogenarian like myself, and confined by sickness, has, by his counsel and his vote, rendered essential aid in the re-occupation of this spot, so dear to the memory of a thousand of its alumni and their friends, with a building, larger than its predecessor, in which we have the pleasure of meeting you this day, for scientific purposes, instead of the solitary visit of some of you, who may remember its schools, its lectures, its exhibitions, and its

*In this connection mention may be made of the valuable services of Miss Apphia Spofford, a teacher for fourteen years, and Miss Sarah Tenney, a teacher for twenty years in the public schools of this and other towns. The first is sister of Dr. Jeremiah Spofford, born July 1, 1796; married Amos J. Tenney, Esq., of Georgetown; at that town she now resides, his widow. The second is daughter of William and Abigail [Jaques] Tenney, and is now a much respected inhabitant of this town.

flower garden, to cast a melancholy look over its dust and ruins.

Our pupils, having been largely of the class who had talents and energy to educate themselves, have given a high average, and we have known of no failure, among the large number who have gone forth to honorable stations, in all the professions; and we have yet to learn if the high schools, which are supported by taxation, in all the large towns, with a view to giving a scientific and classical education to the whole population, are furnishing us as many, or as talented teachers as flowed out spontaneously from the four thousand pupils of our seventy academies, without cost to anybody but themselves, twenty years ago. Our self-made men have always held honorable competition with the sons of affluence, or the protégés of the State; and it is yet doubtful whether academies, accessible to all who had taste and talent, to work their own way to learning and business, were not better than high schools for a whole population, upon free cost, and half a dozen schools, remote from a great part of the state, furnished with palatial buildings, and all the modern conveniences that a state's wealth can purchase!

Mr. JAMES H. EMERTON of Salem, mentioned several cases of protective colors and habits in spiders which he had seen in the grove during the morning walk.

The common *Epeira caudata* of Hentz, covers the remains of its prey and other rubbish with loose silk and arranges them in a line across the web, with room enough at the centre for the spider, who draws her feet close to her body, showing only the brown and gray abdomen, which can hardly be distinguished from the dirt around it.

A specimen of *Attus* was caught on dried oak leaves, in the woods, colored almost the same shade of brown,

mixed with black ; which, when it was still, could hardly be found among the leaves.

Another curious spider, of which three specimens were found, had the abdomen prolonged beyond the spinnerets, much as in *E. caudata*. Its color was brownish-yellow, with darker marks, like dried grass, and it hung in the web with its legs laid close together, and bent in front of the head, looking like a bit of straw accidentally dropped in the web.

MESSRS. ABNER S. PHIPPS, the agent of the State Board of Education, and D. B. HAGAR, principal of the State Normal School in Salem, being invited, made short addresses upon the utility of a knowledge of the natural sciences, combining in good proportions wit and wisdom.

REV. S. C. BEANE of Salem spoke of the system of compulsory education as sometimes not effecting its object if there were wanting in the towns a disposition to carry out the spirit of the law, and mentioned some of the advantages that accrued from the academies which were in a flourishing condition some years since, and were located in many of our rural towns.

REV. E. C. BOLLES of Salem described the various mosses that were noticed in the rambles, illustrating the subject on the blackboard, as had also Messrs. Morse and Emerton. Mr. Bolles was quite eloquent in showing the perfection of nature in all her works, manifesting the absolute perfection of the Creator in all his attributes.

MR. LA ROY F. GRIFFIN, principal of the Phillips Academy, Andover, spoke of the interest he had long felt in the Institute, dating back to the time when he was

at Beverly, and expressing high appreciation of the influence of the Institute in the cause of popular education. He exhibited a specimen of coral which he had picked up in Beverly. The chair suggested that it was probably found near the site of an old lime kiln, similar specimens having been found in like places in Salem. The coral was probably brought from the West Indies by the traders on the return trips and was burnt with shells and other materials containing lime collected on the beaches and elsewhere for the lime that was used for building purposes during the provincial period.

Mr. GOLDSMITH, principal of the Andover High School, followed with a few words expressive of the importance he attached to such organizations in the interests of useful knowledge.

Mr. C. H. WEBBER, after a few preliminary remarks, offered the following resolution, which was unanimously adopted.

Resolved, That the thanks of the Essex Institute are due and are hereby tendered to Dr. Jeremiah Spofford, Dr. Morris Spofford, Rev. John C. Paine, Messrs. Chas. Stickney, D. H. Stickney, Eldred S. Parker, George P. Carlton, O. B. Merrill, B. E. Merrill, Frank Savary, Charles Drew, N. Hopkinson Griffith, Jos. H. Hopkinson of the Dewhirst line of Haverhill & Groveland Omnibuses, Mrs. Martha W. Parker, Mrs. Moses P. Atwood, Miss A. T. Spofford, and all others who have been active in making our visit to-day so pleasant and profitable.

Dr. SPOFFORD and Rev. Mr. PAINE of Groveland responded, saying that they were grateful to the party for the visit, and trusting that it might serve to awaken and perpetuate in their locality a deeper love for natural history and scientific attainment.

The visitors took the return train at 5.08, entirely escaping the drenching rain which soon commenced falling, and which fortunately ceased before their arrival at Danvers. While awaiting the Lawrence train for Salem, a beautiful rainbow appeared in the eastern heavens, awakening those hopeful emotions always inspired by the bow of promise.



THE FIRST WHITE HAMBURG, AND THE FIRST MUSCAT OF ALEXANDRIA GRAPE-VINE IMPORTED INTO THE UNITED STATES.—

COMMUNICATED BY JONES VERY.

In the year 1822, Capt. Jones Very, of Salem, brought to Boston from Malaga in the Barque Aurelia, with a cargo of fruit and wine, two grape-vines; a White Hamburg, and a Muscat of Alexandria, or Royal Muscadine. These were then about two inches round, and were rooted in two large green earthen vases. It was his intention to keep them; but finding it inconvenient, he sold them to a neighbor, Mr. William Dean, living on the opposite side of the street (Essex St., opposite Buffum's Corner), who had just built a greenhouse. Under his care they grew, and have been very productive ever since. The last year 1871, the grapes were very abundant and large. The White Hamburg is now, 1872, fourteen inches round about two and a half feet from the ground, where it divides into two branches, each seven inches round. The Muscat is seven inches round about two and a half feet from the ground, where it branches. These two vines, as I have been informed by J. F. Allen, Esq., are the parent vines of all of these two kinds in this country, being the first imported into the United States. The estate of Mr. Dean is now owned by Mr. George W. Varney.

FIELD MEETING AT ANNISQUAM, THURSDAY,
AUGUST 8, 1872.

A PLEASANT, warm summer's day, so congenial and appropriate for a visit to the seashore, where can be enjoyed the cool and refreshing breezes of the ocean, induced many to accompany the Institute on this excursion to the rock-bound coast of Cape Ann. After a pleasant ride in the cars to the Gloucester station, and thence by carriage some four or five miles, the party arrived at the place of meeting in Annisquam, a parish of Gloucester on the north side of the Cape.

The latter portion of the trip was exceedingly interesting and attractive, passing over a road abounding in rich and varied scenery and in many places highly picturesque; huge masses of rock, with small patches of green verdure interspersed, were conspicuous; the little brown, weather-stained, moss-covered cottages, that thirty years ago were marked features in the landscape, are giving place to a more substantial and commodious class of structures with all the appendages of the new and improved residences; thus indicating that the inhabitants are prosperous and turning their attention to a less precarious employment. From an early period the fisheries have been carried on with varied success at several points on the Cape, around which have clustered villages of considerable extent; although in this section the business has declined, yet the increased attention in others, especially at the "Harbor," has made Gloucester the most important fishing place on the continent.

The introduction of the stone business, which commenced at Pigeon Cove in 1824, and has, in a great degree, superseded the fisheries, effected this change and has

largely contributed to the wealth and prosperity of this people. Many companies have been formed, and from Sandy Bay to Annisquam, a distance of six miles, huge derricks thickly stud the landscape, and the sharp click of the drill-hammer has become a familiar sound. The attention of the summer tourist to the seashore has had a corresponding influence in this direction. Many of the retired and secluded spots on the shores of this county have been appropriated for private residences, and others are gradually being taken up for similar purposes. In this immediate neighborhood the stone mansion of Gen. B. F. Butler at Bay View is conspicuous. Many summer visitors were in this place to pass the hot term—they come literally in swarms, not only from the inland cities and towns of New England, but from New York, the West, and a few from the South. Many of the families camp out by the shore in tents, while others are beginning to have their “cottage by the sea.” The natural curiosities of this place, the woodland attractions, the rides, embracing some of the grandest sea views in the world; the shores generally high and bold, with fine beaches in many places, the bracing and invigorating air—these combined make this place a very desirable resort, in the summer season, to the invalid, the tourist and the pleasure seeker; at other seasons to the sportsman for its sea fowl, gunning and fishing; and at all times to the naturalist for its marine fauna and flora, its peculiar geological formation and fine minerals found in the seams exposed during the process of quarrying.

Mechanic’s Hall, at Squam Point, was the place of rendezvous for the day, where, on arrival, an informal meeting was held, a cordial welcome extended, and arrangements made for the various excursions. Some rambled over the hills and on the shore, as inclination dictated; some

enjoyed a pleasant sail in the harbor (several boats near by were made available and brought into requisition); others crossed over to Coffin's beach and farm on the West Gloucester side to visit the beach and the rocky cliffs upon which the sand had been blown and had given them, at a little distance, the appearance of sand hills, and also to look for Indian shell heaps, usually found in similar localities. In former times this opposite shore was a mass of dense woods; but they have been cleared away and these sand heaps now give a variety to what was formerly hills of grass and other vegetation. The views from the high lands were very extensive and very enjoyable; Coffin's Beach, Castle Neck and Plum Island, at the head of Ipswich Bay, were seen stretching away to the northwest, but owing to a haze in the horizon Agamenticus and the Isles of Shoals, which are usually visible from Lookout Hill, could not be seen. There is also a curious trap dyke leading from one of the camping houses and within a few minutes walk of the place of rendezvous.

A little past noon the various parties began to reassemble in the hall to partake of their lunch, the people of the village having kindly provided a bountiful supply of tea and coffee, and extended other civilities, which were gratefully received; afterwards adjourned to the Universalist Church at the head of the Cove, where the public meeting was held, commencing at 2 P. M.

(To be continued).

BULLETIN

OF THE

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FIELD MEETING AT ANNISQUAM, THURSDAY,
AUGUST 8, 1872.

[*Continued.*]

THE PRESIDENT in the chair. Records of preceding meeting read.

THE PRESIDENT in his opening remarks alluded briefly to the objects of the Institute, the origin of the field meetings, the opportunity offered thereby to gather information, from every part of the county, of historical and scientific value, and also to awaken an interest for these pursuits in the several places visited. He mentioned that two meetings the present season had previously been held: one at Middleton, an inland town diversified with hills and dales, with many by-paths skirted with shrubbery and flowering plants, with pleasant ponds and running streams; on the shores of one of these ponds known as Forest Lake was the rendezvous for the day; the other at Groveland, on the banks of the Merrimac, with the

beautiful grove on the river banks, hence its name, and fine views from the several eminences in the centre of the town. He said that this day they had come to the seashore, the rock-bound coast, lashed in the wintry months with the tempestuous waves, and that in the summer the calm and placid waters, the cool and refreshing breezes rendered it a most delightful retreat; that here another field was opened for their inspection, the marine fauna and flora, and the peculiar geological formation of this part of the coast.

The speaker reminded them that they had come to a new place, not newly settled but new to most of them, and in common with the members of the Institute he had found much enjoyment in visiting these new scenes and attractions.

Mr. F. W. PUTNAM of Salem was called upon and made some interesting remarks founded on two specimens which he had collected during his rambles in the forenoon.

INDIAN SHELL HEAPS.

He said that he had taken a boat and visited Coffin's beach and the sand hills adjacent, with the hope of discovering some of the Indian shell heaps which are frequently found along the New England coast, often buried beneath the sand drifts, and uncovered at other times by the shifting of the sand. He had found but one such at Coffin's farm as the excessive heat prevented him from continuing his search. From this one he had obtained a small piece of Indian pottery, which was passed round and exhibited to the audience. He said this was a piece of an ornamented pot, as was shown by the groove across it, and from the curvature of the piece it must have been a part of a small vessel. Some of these pots were

eighteen inches in diameter, and others quite small. The Indian pottery was composed of clay and pounded clam shells, and dried in the sun at first, though afterwards, as they were used for cooking purposes, they had the appearance of having been baked. These shell heaps also contained axes, gouges, arrow-heads and other stone implements, and particularly interesting was a kind of fish spear made of bone. There was also found a kind of awl made of bone, finely pointed and used by the Indians for making holes in skins, etc. By an examination of the kitchen refuse heaps of the Indians, it could be determined pretty accurately the kinds of animal food that were used by them. Bones of the deer, moose, and the other animals once common to this part of the country, had been found; also the black bear, and in one instance a tooth of a white bear, which indicated that though this animal is an inhabitant of the arctic regions, he might have been occasionally found, in times long past, in these latitudes. In all, the bones of some ten or twelve of the different kinds of mammalia had been found in these refuse heaps. The bones of a bird now extinct, as is believed, the last known specimen having been taken in Greenland, the great auk, had been found. This bird was of a heavy build and incapable of flight. Of the fish, the Indians used all the common kinds here taken, and they also consumed large quantities of the fish known as the wolf fish, devil fish, or monk fish, which we regard as unfit for food. More than two-thirds of the fish bones found in many of these Indian refuse heaps were of this species.

EGG CASE OF THE SKATE.

Another interesting specimen obtained by him was the egg case of one species of the skate. This is found on

our beaches and is supposed by many persons to be a kind of sea plant, being black and of the texture of dried rockweed. In shape it very much resembles a hand barrow and one of its common English names is derived from this resemblance. This case is formed in the oviduct of the fish, and unlike the process in other oviparous animals, where the shell is the last part of the egg produced, this case or shell is in part formed before the egg is deposited in it. The egg, enclosed in the case, is then laid and becomes attached to various substances by means of filaments extending from the projections or tubes of the case. After a while the young skates are hatched, when the empty shell is driven on shore. Many of the skates lay eggs of this character, others are viviparous. The common dog fish, which is a species of shark, is viviparous, and produces five or six young in a perfect state at a time. Some of the larger species of sharks are oviparous, others are viviparous. Mr. Putnam's remarks were listened to with much interest, many of his facts being new to a large portion of the audience.

HISTORICAL NOTICES OF THE THIRD PARISH AT ANNISQUAM.

Rev. E. W. COFFIN, of Orange, Mass., a former pastor of the society at Annisquam for the term of five years, was next called upon to give a short sketch of the history of the society. He said that Mr. Hooper, the present pastor, having been notified that it would be desirable for him to give the meeting some information concerning the rise and progress of the Parish in whose church they were to assemble, and having made arrangements, which he could not change without great inconvenience, to be absent on his summer vacation at the time of holding the meeting, had requested him to supply the desired information. He had, when pastor of the society, prepared and

delivered two discourses on its history, but as he did not have them with him at this time, he could only avail himself of the matter contained in them, as far as his memory could serve him, and he might make some mistakes. This was originally the third Congregational Parish in Gloucester, the one in the harbor being the first, and the one in the West Parish being the second. The first minister settled over the parish was Benjamin Bradstreet, who was settled in 1728, and continued pastor till his death in 1762. He had a numerous family, and one of his daughters married James Day, a resident of this village, and some of their descendants are living in this neighborhood at the present time. From the best information he (Mr. Coffin) could obtain, he believed that the first meeting house, which probably stood near the old burying-ground at Bay View, was burned, and that on the question of building another a division arose as to the location, some of them wishing to rebuild on the old site, and some on the site of the present church, and that at a meeting of the Parish it was decided by a majority to build on the old site, and that the frame of the building was prepared and placed on the spot preparatory to raising it the next day. But when the people came to the raising the next morning they found no frame there, the friends of the present location, having, during the night, removed the whole of the timber to this site. This action settled the question as to location, and the meeting house was built on the place where this church stands, and here it stood till 1830, when it was replaced by this structure. Rev. John Wyeth was the next minister; he was settled in 1766, but remained only two years. The parish could not be called minister worshippers, as might be judged from their peculiar way of hinting to Mr. Wyeth their desire for a change: once a musket ball was fired just

over his head, and his black horse, during one night while in the pasture, changed color by a liberal application of whitewash. The pastor finally took the hint and left, stopping at the top of the hill, and shaking the dust from his feet as a testimony against them. The next minister was Rev. Obadiah Parsons, who was an eloquent man, and his pulpit services were very acceptable. Stories were circulated discreditable to his moral character, however, and he was finally dismissed. It is related that at the council called to consider his case, the principal witness against him was a colored woman, and the question arising whether the testimony of a colored person should be received, it was decided at that early day not to receive the same. The church remained without a pastor until the Rev. Ezra Leonard, who is and ever will be held in high veneration by the people of Squam, was settled in 1804, and remained pastor till his death in 1832. A remarkable change took place during his administration, he publicly embracing the doctrine of Universalism in 1811, carrying the whole society with him, with the exception of four or five families. In announcing this change of views, he preached a Universalist sermon, and told them he believed this doctrine, and must preach it if he preached at all. The parish voted to retain him until his year expired, and in the following March the record says it was voted that "he continue to preach the gospel as usual." Mr. Coffin also gave a short sketch of all the ministers of the parish since the death of Mr. Leonard, but want of space forbids our following his remarks further than giving their names, time of service and brief individual notices.

Rev. Abraham Norwood, one year; Rev. Elbridge Trull, one year; Rev. John Harriman, three years; Rev. Geo. C. Leach, four years; Rev. M. B. Newell, three

years ; Rev. J. A. Bartlett, two years ; Rev. B. H. Clark, one year ; Rev. E. W. Coffin, five years ; Rev. Nath'l Gunnison, three years ; Rev. E. Partridge, two years ; Rev. L. L. Record, three years ; Rev. J. H. Tuller, one year ; Rev. J. H. Willis, two years ; Rev. F. A. Benton, one year : bringing us down to the present pastor, Rev. Mr. Hooper, who was settled in 1871, and whose temporary absence we regret to-day. The church, as a Universalist body, has had fifteen ministers, of whom only seven survive.

Mr. Norwood has been an able and amiable minister, residing now in Conn. Mr. Trull thought he could do better in furnishing medicine for the *body*, and so engaged in the druggist business. Mr. Harriman left the ministry and engaged in secular pursuits, and has been dead many years. Mr. Leach united with, and is now a member of, the Catholic church. Mr. Newell committed suicide about six years ago, in West Brattleboro', Vt. Mr. Bartlett died a few years ago, having previously retired from the ministry. Mr. Clark changed his views while at Annisquam and never preached afterward. Mr. Coffin has ever been, and is now a Universalist minister of the conservative type, and is now settled in Orange, Mass. Mr. Gunnison one of our most able and excellent ministers, died two years ago, in Maine, of paralysis. Mr. Partridge is yet alive, "hale and hearty," although "the almond tree flourishes" to a perfect whiteness. Mr. Record, a most excellent man and minister, left for the higher life two years ago. Mr. Tuller is yet living in one of the western states. Mr. Willis is now settled in North Orange, Mass. Mr. Benton was a young man of brilliant talents and a very good man, but too radical to suit a majority of the parish at Annisquam. He is now preaching to a radical society in the west.

ALLEN W. DODGE, Esq., of Hamilton, was the next speaker. He said he had been introduced as the County Treasurer, but he did not think that circumstance would add much to the interest of his speech. He said if any one had a draft on him in his official capacity, he would pay it at sight, but as to any scientific drafts, he should require several days' grace on them. He said the world regarded the acquisition of wealth as the only true success, but he thought that the young men of this Institute who had been sitting at the gates of the temple of nature, and knocked till they had obtained an answer, and had then given the knowledge thus obtained to the world had attained a higher success. Mr. Dodge's remarks were highly entertaining and valuable, and we regret that space will not permit a more extended abstract of the same.

Rev. L. J. LIVERMORE of Cambridge, at present supplying the Unitarian pulpit in Danvers, expressed his appreciation of such organizations as the Essex Institute.

Hon. JAMES DAVIS, the Trial Justice of Gloucester, claimed to be a Squamer, and as such he had a right to welcome the excursionists to-day, which he proceeded to express in most cordial language.

Hon. J. J. BABSON, of Gloucester, being called upon, gave an interesting

HISTORICAL SKETCH OF ANNISQUAM.

MR. PRESIDENT:—In response to the call upon me for some historical incidents connected with the spot upon which we are assembled, I have merely to observe that such of these incidents as are of general interest are very few. Famous Capt. John Smith, you all know, made the

first exploration of the coast of New England, from Penobscot Bay to Cape Cod, in 1614. Within these limits, according to his own account, he "sounded about twenty-five excellent, good harbors," but whether the one some of you have sailed upon to-day was included in the number or not, no one can tell. From the hills you have looked out upon "Augoam" and the great bay "north of the fair headland Tragabigzanda." We must rejoice that this name, notwithstanding the romantic interest connected with it, was soon changed for that of Ann, queen of James I. The name Squam is an Indian word, first occurring in print, so far as I know, in William Wood's map of Massachusetts, drawn in 1633, where it is spelled Wonasquam. It also occurs in Winthrop's Journal, under the year 1635; and at a little later date in Josselyn's "Account of Two Voyages to New England." He spells it Wonasquam, and calls it "a dangerous place to sail by in stormie weather, by reason of the many rocks and foaming breakers."

The scenic features of this locality are very noticeable; and, considering the rugged character of its surface, it is hardly surprising that eighty-six years elapsed after the incorporation of the town before a sufficient number of inhabitants were found on it to set up a distinct parish organization. Of this, and its ministers, Mr. Coffin, one of the number, has just given us an interesting account. He might, if time had permitted, have enlarged much upon the ministry of Rev. Ezra Leonard. I look upon the conversion of this pastor and his people from the ancient faith of the New England churches to the doctrine of universal salvation as one of the most remarkable events in the history of the town. Here is a minister, a graduate of Brown University, educated in the strictest doctrines of Calvinism, and settled over a church which

has for many years listened to him as the expounder and advocate of these doctrines, who announces to his people that a great change in his religious belief has taken place, and that he must, if not there, elsewhere, henceforth preach a doctrine he has all his life been laboring to destroy; and these people, after serious deliberation, conclude that it is better to change their religion than to change their minister. This action was a striking testimonial to the superiority of christian character over sectarian profession, and the result of it was an abundant harvest of religious harmony and joy throughout the twenty years of his continued ministry. The memories of these people are even now, forty years after his death, full of the kind words and good deeds of this honored and beloved pastor. The description of the good minister in Goldsmith's "Deserted Village" will apply to him. "E'en his failings leaned to virtue's side;" so, at least, must have thought the poor, ill-shod woman whom he met in the road as he was walking home one wintry day, and to whom he gave the pair of shoes, which, to supply an urgent need of his wife, he had been to the harbor to buy.

Rev. C. E. BARNES of Salem felt a deep interest in the study of nature. He believed that the more we knew of nature, the more plainly should we perceive that the God of creation was the God of revelation.

Dr. ADDISON DAVIS of Boston, a Squam boy, spoke most eloquently of the swarm of B's abounding here: beauties, beaches, berries, belles, etc. He was glad that the Institute had come here, for he knew that they would come again. Men who study do know something better in quality and quantity than those who do not, and they increase the sum of human happiness.

The LIBRARIAN announced the following additions:—

By Donation.

ABBOTT, C. C., of Trenton, N. J. Official Register of the Officers and Men of New Jersey in the Revolutionary War. 1 vol. 8vo. Trenton, N. J. 1872.

CATE, S. M. The Pellet, a paper at the Homœopathic Fair, Boston, April, 1872.

FOOTE, CALEB. Files of several County papers, May, June, July, 1872.

GREEN, S. A., of Boston. Fourth Annual Report of the Trustees of the Boston City Hospital. 1 vol. 8vo. Boston, 1868. Miscellaneous pamphlets, 47.

GRIFFIN, LA ROY, of Andover. Catalogue of Phillips Academy, 1871-2.

HAYDEN, F. V. U. S. Geological Survey of the Territories. Profiles, Sketches, etc. 1 vol. 4to. New York, 1872.

PEABODY ACADEMY OF SCIENCE, Salem. Memoirs. Vol. i, No. 3.

POORE, B. PERLEY, of West Newbury. U. S. Official Register, 1871. 1 vol. 8vo. Post Office Directory, 1 vol. 8vo. Washington and Georgetown Directories for 1868, 1869, 1870. 3 vols. 8vo.

SALEM NATIONAL BANK. Boston Daily Advertiser, 1871, 1872.

SALEM MARINE INSURANCE COMPANY. New York Commercial Advertiser, 1858, 1859, 1860, 3 vols. folio. New York Daily Advertiser, 1861, 1 vol. folio. New York Shipping List, 1857-8, 1858-9, 1860, 1861, 4 vols. folio. Boston Daily Advertiser, 1854, 1857, 1858, 1860, 1861, 5 vols. folio.

SPENCER, THOMAS, of Bransby, near Lincoln, Eng. Doomsday Book Translation by Chas. G. Smith. 1 vol. 8vo. Battle of Agincourt, 1 vol. 8vo. London, 1833.

SPOFFORD, DR., of Groveland. Genealogy of the Spofford Family, 1 vol. 12mo.

By Exchange.

AMERICAN ACADEMY OF ARTS AND SCIENCES, Memoirs of. Vol. x, Pt. I, 1868. Proceedings of, sigs. 38-51 of Vol. viii. 1870.

ARCHIV FÜR ANTHROPOLOGIE. Bd. v, Heft II, 1872. 4to pamph.

BIBLIOTHEQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences Physiques et Naturelles. Nos. 169-173, 1872. 5 pamphlets, 8vo.

CANADIAN INSTITUTE, of Toronto. The Canadian Journal of Science, Literature and History, Vol. xiii, No. 4. July, 1872.

GESELLSCHAFT NATURFORSCHENDER FREUNDE ZU BERLIN. Sitzungs-Berichte, 1871. 8vo pamph.

IOWA STATE HISTORICAL SOCIETY. The Annals of Iowa, Apr., 1872. 8vo pamph.

K. K. ZOOL. BOTAN. GESELLSCHAFT IN WEIN. Verhandlungen, Jahrg., 1871. Bd. xxi. 1 vol. 8vo.

KONGLIGA SVENSKA VETENSKAPS AKADEMIEÉN STOCKHOLM. Oversigt, Bd. xxvi, xxvii, 1869, 1870. Lefnadsteckningar, Bd. i, Hafte II, 1870. Handlingar, Bd. vii, viii, ix, 1868, 1869, 1870.

L'INSTITUT ROYAL GRAND-DUCAL DE LUXEMBOURG. Publications, Tome xii, 8vo pamph. 1872.

NATURWISSENSCHAFTLICHER GESELLSCHAFT ISIS IN DRESDEN. Sitzungs-Berichte. Oct., Nov., Dec., 1871. 8vo pamph.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Hist. Gen. Register and Antiquarian Journal, July, 1872. 8vo pamph.

ROYAL SOCIETY of Tasmania. Monthly Notices of Papers and Proceedings for 1870. 8vo pamph.

SENCKENBERGISCHE NATURFORSCHENDE GESELLSCHAFT IN FRANKFURT. Abhandlungen, Bd. viii, Pt. I, II. 4to pamph. Bericht, 1870, 1871. 8vo pamph.

SOCIÉTÉ D'ACCLIMATATION. Bulletin, Mensuel, 2me Serie, Tome ix, 1872.

VEREIN ZUR BEFÖRDERUNG DES GARTENBAUES IN BERLIN. Wochenschrift, Jahrg, xiv. Numbers 1-52. 1871.

ZEITSCHRIFT FÜR DIE GESAMMTEN NATURWISSENSCHAFTEN IN BERLIN. Bd. iv, July-Dec., 1871. 6 pamphlets. 8vo.

PUBLISHERS. American Naturalist. Christian World. Gloucester Telegraph. Haverhill Gazette. Ipswich Chronicle. Land and Water. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Salem Observer.

The SECRETARY announced the following correspondence :—

J. W. Balch, Boston, July 31; J. Prescott, Boston, July 30; Boston Public Library, July 22; Bowdoin College, Trustees, Aug. 5; Buffalo Historical Society, July 22, Aug. 2; Frankfort-a-M., Die Senkenbergische Naturforschende Gesellschaft, Mar. 19; London Royal Society, July 1; Maine Historical Society, Aug. 5; Maryland Historical Society, July 23; New England Historic-Genealogical Society, Aug. 5; New York Historical Society, July 19, 22, Aug. 3; Ohio Historical and Philosophical Society, July 30; Rhode Island Historical Society, Aug. 1; Stockholm, L. Academie Royale Suedoise des Sciences, Avril, Mai 8.

The PRESIDENT read the following letters from Messrs. Thomas Spencer and E. W. Farley, which were addressed to him and had recently been received.

BRANSBY, NEAR LINCOLN, 10th 7th mo., 1872.

DEAR SIR:—I have this day forwarded, by son Franklin who sails from Liverpool in the "Spain" for New York, a partial translation of Doomsday book and hope that it may be accepted as a small contribution to the historical department of the Institute. I am prompted to do so by the fact that on one of my voyages from Salem to the old country, some Salem gentlemen requested me to hunt up a full translation of the original Doomsday. This commission I could not execute and I am not now aware that such a translation is extant. With this volume there is a map of England which exhibits a picture of the country very much as the Pilgrim fathers left it behind them.

I have forwarded by the same conveyance History of the "Battle of Agincourt" because it contains the Roll Call of the principal English gentry, the class who followed our fifth Henry in his famous expedition. I remember on one occasion hearing the Rev. Mr. Withington of Newbury quote from this Roll Call to prove from the similarity of names that the principal part of the early settlers of New England were from the same class. This little reminiscence prompted me to send the History. It is not a readable book any more than Doomsday,

but it may have an interest for the archæologist and, peradventure, a place in the historical department. It is a cherished doctrine of mine that the history of old England and New England are identical up to the great Revolution.

I beg to acknowledge the receipt of books and papers relating to the antiquities of Salem and its vicinity, together with some that exhibit a pleasant picture of the happy life of the good people of the good old town. Long may they continue to enjoy their happiness. I remember with affectionate gratitude their kindness to me and mine when we were poor and strangers among them. Believe me, dear Dr. Wheatland, thy sincere friend and humble coadjutor,

THOMAS SPENCER.

NEW CASTLE, MAINE, JULY 29, 1872.

DEAR SIR:—During my pleasant call at the rooms of the Institute, at Plummer Hall, in October last, in company with my friend, Cyrus Woodman, Esq., of Cambridge, I promised to send you a history of the oak arm-chair, which I saw there, which was presented to the Essex Historical Society, June 27, 1821, by the late Robert Brookhouse, Esq., of Salem.

This I should have done long since, had I not been waiting to make a fit disposition of another chair, the mate of yours, at that time in my possession and which has a history similar to yours, down to the time the latter went into the possession of Mr. Brookhouse.

I have given mine to Bowdoin College, for a Commencement Chair, with a plate added, suitably inscribed. As my letter to President Chamberlain, of that Institution, embraces all that is of interest connected with both chairs, including a chest and a tape loom, all of which comprised a set of four pieces of furniture, formerly belonging to the Dennis family, of Ipswich, in your county, I send you by this mail, a copy of the Brunswick Telegraph, of July 26th inst. containing the letter, and it is unnecessary for me to add any thing farther to the subject of this communication.

Yours very respectfully,

E. W. FARLEY.

The following extract from the letter of Mr. Farley to President Chamberlain was then read.

Its history is this: it was brought from England, probably in 1635, when Daniel and Thomas Dennis, the first emigrants, so far as I can discover, of the Dennis family of Ipswich, Essex County, Mass., came over. This chair, with its mate, similar in style, though a size smaller

(from which circumstance, I infer that it was for the matron of the house), an oaken chest, about 2 feet 6 inches in length, by 1 foot 6 inches in width, with legs, and a lid, its sides carved like the chair, and a small tape loom, such as the ladies of the olden time used to manufacture their garter stuff, comprised a set of four pieces of furniture, which my paternal grandmother, Sarah Dennis, wife of John Farley, both of said Ipswich, brought to this town, to which they removed in 1772 or 1773. Its mate, through Robert Brookhouse, of Salem, Mass., who married a daughter of my grandfather Farley, found its way back to Essex County, and was presented by him to the Essex Historical Society (since merged in the Essex Institute), on the day of its organization, June 27, 1821, and was occupied by the venerable Dr. Holyoke, its first President. It is now at the rooms of the Institute, at Plummer Hall, in Salem. Some years afterwards, the chest went into the possession of Mr. Brookhouse, and is now in the possession of his daughter (by a second wife), Mrs. Perkins, wife of Judge Perkins, of Salem. The tape loom has been lost, or destroyed.

That chest bears the date of 1630. David Dennis, a brother of my grandmother, Sarah Dennis, aforesaid, who died at Nobleboro', in this State, in October, 1843, aged 92, told me a few months prior to his decease, that these pieces of furniture were then more than 200 years old. His statement, taken in connection with the date upon the chest, establishes, I think, beyond reasonable cavil, the age of the chair.

Mr. R. KNOWLAND of Marblehead, after a few preliminary remarks, offered a resolution of thanks to the proprietors of the church, to Messrs. James S. Jewett, George Norwood, Josiah Friend, John D. Davis, Elias Davis, Jr., A. F. Bragdon, W. E. Dennis, John A. Going, James A. Dennison, Fred. Davis, Fred. W. Lane, James Davis, E. W. Coffin, and all others who had been active in their attentions, during this pleasant visit to Annisquam. The resolution was unanimously adopted.

The meeting closed at 4 o'clock and the party was conveyed from the church to the railroad station in carriages in waiting and departed highly pleased with their excursion, both as to the kind reception by the people of the village and the beautiful scenery and views presented on every hand.

CATALOGUE OF THE MAMMALS OF FLORIDA, WITH NOTES ON
THEIR HABITS, DISTRIBUTION, ETC.—BY C. J. MAYNARD.

INTRODUCTION.

THE following paper is the result of notes taken during three winters' travel in Florida. These journeys were undertaken mainly for the purpose of studying the habits of the birds found in this region, but considerable attention was also paid to the mammals. The first trip was made during the winter of 1868-69, when the country about the lower St. John's, Lake Harney, and the eastern coast, north of Cape Canaveral, was explored. At this time I was accompanied by Messrs. C. A. Thurston and J. F. LeBaron, who served as assistants. The second journey was accomplished during the season of 1870-71. Then the country on the western coast about Cedar Keys, and the southern portion of Florida, including the Keys and Everglades, were visited. I was assisted in my researches by Mr. H. W. Henshaw, and accompanied by my artist friend, Mr. E. L. Weeks.

The ensuing winter (1871-72) found me once more on the St. John's River. The country along this river was explored as far as South Lake; then we visited Indian River and examined the coast as far as Spruce Creek on the north, south to Jupiter Inlet. I was accompanied by an assistant, Mr. E. C. Greenwood, and Messrs. G. W. Winegar, T. P. Barnes, Jr. and F. A. Ober. I am indebted to the gentlemen named for notes and specimens. I would also tender my thanks to Capt. Douglass Dummett of East Florida, Dr. J. V. Harris of Miami, Mr. J. L. Burton, who served me well as a guide, for valuable notes and assistance, and to Prof. S. F. Baird, Dr. Harrison Allen and Mr. J. A. Allen for kindness in identifying specimens.

Besides the notes upon the habits, distribution, etc., of the species given, some of which may perhaps be new, I have been able to add one species to the fauna of the United States, one to the eastern section of the Union and one to Florida. A few other mammals than those given may occur in the state, especially the smaller species. But I trust this will prove a tolerably correct catalogue of the mammals which inhabit Florida.

FELIDÆ.

1. *Felis concolor* LINN.

Panther, Tiger, Puma.

This large cat is very common on Indian River, in the interior and more southern sections of the state, but is not found on the Keys. It is quite a formidable animal, growing sometimes to be eleven feet in length, measuring from the end of the nose to the tip of the tail, and

if its courage corresponded with its size it would be a dangerous foe to the inhabitants. It is, however, exceedingly cowardly and I never knew of any well authenticated instance of its attacking man, although some stories were related of its carrying away young children, which may have been true. The puma is capable of performing such feats, for it possesses great strength. Capt. Dummett informed me that he had shot one near his plantation in the autumn of 1871, which had killed a full grown buck and was devouring it.

Like many of this family the puma is nocturnal in its habits and remains concealed in the dense swamps and hummocks during the day, commonly reclining on the limb of a tree. It is said to drop upon its prey from such an elevation, and many old hunters warned me against passing through the thick woods in the early morning or late in the evening as they said that the tigers were usually on the alert at such times and might be tempted to spring upon one if he were alone. It is very inquisitive when its dominions are invaded during the day, and will often follow the intruder for some distance, uttering a low, moaning cry, but is always careful to keep concealed.

Besides this peculiar low note it emits a variety of harsh sounds, some of which are only given during the night, and are quite terrifying when first heard, especially one in particular which resembles the scream of a woman in extreme agony. This cry is more frequently given in March, when the males are in pursuit of the females. I think the young are dropped in the autumn. Skins of this animal which I have seen from Florida are of a decidedly rufous color without spots or bars. It may be well to remark that I have frequently heard, from hunters, of tigers which were not only of a larger size than the common species, but which were said to be spotted. I never saw a specimen, but it is not impossible that the closely allied species *Felis onca* may be found here, although I hardly think it probable.

[*To be continued.*]

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CATALOGUE OF THE MAMMALS OF FLORIDA, WITH NOTES ON THEIR
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[*Continued.*]

2. *Lynx rufus* RAFINESQUE.

Common Wild Cat.

THIS animal is abundant even on the borders of the settled districts. It is quite annoying to the planters, for it not only commits serious inroads upon hen roosts, but frequently carries off young pigs. It is a nocturnal animal, and is seldom seen abroad during the day, but conceals itself in the thick hummocks. During the season when the males are in pursuit of the females it may be occasionally met with, especially in the morning and evening. At this time its loud and varied cries are heard, sometimes during the day, but oftener during the night. This is naturally a cowardly animal, and will invariably fly from man when it has the power to do so. The wild cats are only as large as setter dogs, yet they possess great strength, and a man requires considerable determination to attack one when placed in such a situation that it cannot escape. My friend, Mr. Thurston, once seized a full grown male, that was only slightly stunned by a charge of dust shot, and strangled it, but did not escape without receiving some scratches. Although shy when faced, they will often approach quite near one when sleeping in the open air, and I have upon two

occasions been awakened by their cries to find the beasts within a few feet of me, but upon my moving they instantly sprang away.

Florida specimens of this species are fully as large as those from more northern localities. I give the dimensions of a full grown male taken at Dummett's. From nose to eye, 1·80; to ear, 4·78; to occiput, 6·00; to root of tail, 33·00; to outstretched hind leg, 48·00. Tail to end of vertebra, 7·75; to end of hair, 8·60. Length of hind leg, 7·00. Length of hand, 4·40; width, 2·00. In color Florida wild cats are much more rufous than those from the north, and are inclined to be more spotted.

CANIDÆ.

3. *Canis lupus* LINN.

Gray Wolf.

The stronghold of these wolves is at present in what is called the "Gulf Hummock" in western Florida, where they are quite numerous. According to Mr. F. A. Ober they are also found about the Kissinee River and Lake Okechobee. I saw the tracks made by a single animal near Salt Lake. It was accustomed to pass along a sandy road every night for the greater part of the time which we remained in the vicinity. My guide, Mr. Burton, who had resided near this place for some months, informed me that he had never seen it, nor had any of the settlers, although it was frequently heard to howl. I did not meet with any wolves about Miami nor do I think that they occur south of the Everglades. Individuals who have frequently taken this species describe them as being very dark colored, usually quite black.

4. *Vulpes Virginianus* RICHARDSON.

Gray Fox.

Common in the wilder districts. This little fox does not appear to do any great degree of mischief on the plantations and it is probable that it finds sufficient wild game to satisfy its appetite. I once surprised one that was cautiously making its way towards a large bevy of quails with the evident intention of capturing some. Specimens from Florida are quite gray in color, especially upon the upper parts.

MUSTELIDÆ.

5. *Putorius lutreolus* CUVIER.

Mink.

I saw but a single specimen of this animal. This was on the St. John's River above Blue Springs, where one swam across the river but a short distance in advance of our boat. I did not learn that it was at all common; indeed, nearly all the hunters seemed entirely unacquainted with it.

One feature, noticed in skins of this species taken in Maine and New Hampshire, which I have never seen mentioned, is the presence of white hairs which are more or less numerous in the dark colors of the back. This species appears inclined to albinism, but the appearance of the white hairs is not the result of this disease, for in every instance that I have seen of an approach to albinism the fur turns white first and the hair afterwards.

6. *Lutra Canadensis* SABINE.

Otter.

Very abundant throughout the greater part of the state. I found them as numerous on Indian River as in the interior, but did not meet with them at Miami, in the Everglades or among the Keys. The fur is of little value in comparison with northern skins; the best winter pelts being worth but five dollars each in Boston. The usual price paid in Jacksonville is from seventy-five cents to one dollar, consequently they are not hunted much and therefore are not shy. They are quite inquisitive and will sometimes follow a boat for some distance, or approach any one standing upon the shore. At the same time they will utter a short, continuous grunt. Otters may frequently be seen chasing each other sportively through the water, and while we were in the vicinity of South Lake, my guide, Mr. Burton, called my attention to certain smooth paths in a sandy spot, which he said were otter slides. They appear to amuse themselves by dragging their bodies over the smooth sand, just as the same species glide down snow-covered river-banks at the north. The slides in Florida were situated at some distance from the water.

The color of adult otters from this state is strongly inclined to reddish-brown, but the young which are dropped in February are very dark. I think I never saw a more beautiful animal than a young specimen of this species which was captured at the head of Indian River by Mr. Thurston. It was only about two weeks old, yet was covered with a fine coat of exceedingly glossy fur.

7. *Mephitis mephitis* BAIRD.

Common Skunk.

This species seems to be restricted to the more northern portions of the state. Specimens taken in this region present the same variation regarding the distribution of the black and white which is noticeable in this animal elsewhere. Although the amount of the above named colors is changeable, it is unusual to see the skunk of a different hue; yet Mr. F. A. Ober of Beverly has a specimen which was taken in that place, that is marked in a very singular manner, inas-

much as those portions which are usually black are in this instance pale brown or fawn.

8. *Mephitis bicolor* GRAY.

Little Striped Skunk.

This pretty little species which, previous to my discovering it in Florida, was not known to occur east of the Mississippi, is very abundant in certain sections of the state. They are confined to the narrow strip of land which lies between Indian River and Turnbull Swamp, being found as far north as New Smyrna and south to Jupiter Inlet. They appear to take the place of the common skunk, which does not occur in this section. They frequent the scrub, and traces of them may be seen at all times, for they have the habit of digging small holes in search of insects, like the preceding species. These skunks are easily domesticated and I have frequently known of their being used in the houses for the purpose of catching mice. Sometimes the animals are captured and the scent glands removed, but they are often simply decoyed about the premises by exposing food, when they will take up their abode beneath the buildings, and will soon become so tame as to enter the various apartments in search of their prey.

URSIDÆ.

9. *Procyon lotor* STORR.

Raccoon.

Very numerous both upon the mainland and among the Keys, even frequenting the low mangrove islands which are overflowed by every tide. They subsist upon fish and crabs to a great measure when upon the seashore, but in the interior they live chiefly upon the fluviatile mollusks (*Unio*, *Pomus*, etc.). They are strictly nocturnal, seldom appearing abroad during the day.

In color the Florida raccoon differs from New England specimens in being more rufous; the black markings are not as conspicuous, the dark rings on the tail being sometimes nearly obsolete; in fact, adult specimens from Florida in this respect resemble those from New England.

10. *Ursus Americanus* PALLAS.

Black Bear.

Very common, especially in the unsettled districts; giving the inhabitants considerable trouble by destroying young pigs. Although extremely abundant in certain sections, as the numerous tracks indicate, it is difficult to see one, for they chiefly move about during the night. The bears of Florida do not hibernate, but are not quite as active during the winter months as in summer. The young are

born in early spring, after which the females are said to be somewhat dangerous, especially if surprised when with their cubs; but at other times both sexes are arrant cowards. They will not even molest one when sleeping, but will always avoid the presence of man when aware of it. I have made my bed in a bear path and, in the morning, found by the tracks made by them in the night that they made a wide circuit rather than pass near me.

The food of the Florida bears is variable. During the early winter they feed on the berries of the common and the saw palmettoes; later in the season they eat the tender new growth, or buds, of the above mentioned plants; for this purpose they will climb the tallest palmetto and with their strong claws will tear out the "cabbage," as the new growth is sometimes called, and eagerly devour it. The removing of this bud is no easy task even to an experienced person provided with an axe, yet Bruin's great strength enables him to force the tough leaf-stalks asunder with the greatest of ease. Trees which have been treated in this rough manner invariably die and a large number may be seen in this condition in any cabbage swamp.

When the king or horseshoe crabs come on shore to deposit their spawn, the bears resort to the shore and, after turning the crustaceans over, scoop out their softer parts. They are also aware of the time when the sea turtle lay, and during the months of June and July walk the beaches nightly and devour the eggs. Indeed, so persistently do they hunt for them that it is almost impossible to find a nest that has been undisturbed.

The bears of this state are fully as large as those from New England, and the hair is as dark colored. I have also seen skins that were but little inferior to northern ones in woolliness, but generally they are only covered with hair. One which I procured at Dummett's in the winter of 1869 is singularly marked, for it has brownish lines starting from the point of each shoulder and extending down the legs on the inside. The other portion of the hair is black. The young for a year or two are strongly inclined to reddish-brown. The bears inhabit the entire portion of the mainland, but are seldom found on the Keys.

CERVIDÆ.

11. *Cariacus Virginianus* GRAY.

Common Deer.

Very numerous in almost all sections. The deer of Florida are not likely to be exterminated very soon, not only because of their abundance, but because the inhabitants do not kill them wantonly, knowing that they are extremely valuable to them for food, and the tourists who possess sufficient skill to capture any number of them are scarce.

When we first attempted to hunt deer we were almost always unsuccessful, even rarely being able to see one, and were informed by the hunters that we did not go out at the right time. Upon questioning them they told us that the deer were governed in their time of feeding by the moon. An hour before moonrise the animals arose from their beds or came out of the hummocks to feed upon the grass in the clearings, or in the piny woods, continuing until after the moon was up. An hour before the moon southed (*i. e.*, attained its highest altitude) they did the same thing, and also when it was directly beneath the earth, making in all eight hours feeding time. At first I laughed at this as an old hunter's notion, for although it is easy to understand why the deer should feed at those times when the moon rises near night and sets near morning, it is difficult to perceive why they should conform to the same rule through all the varying phases. But after three seasons' experience I am obliged to acknowledge that as far as my observation extends this theory is correct. The deer are certainly seen feeding much more frequently during these stated times than at others. Of course one occasionally meets a straggling animal at other hours, but I never found any number on their feet at any other time. All the hunters with whom I have conversed also confirm this. Another singular fact is that the great horned owls hoot at the feeding time of the deer, even if it be broad daylight. I have observed this fact on many occasions, and the hunters, when they hear the owls, say "now the deer are feeding."

Early in February the deer moult. The bucks then lose their horns and the does are heavy with young, which they drop in March. Before the moult the hair is of a bluish color, but after shedding they take on a sleek coat of fine reddish hue. This animal is found in all sections, even on the Keys. They inhabit small islands where they can obtain little or no fresh water, yet deer from these localities are noticeably larger than those from the mainland. Of this fact I have been assured by Lord Parker, an English gentleman who has spent several winters in Florida, and who has killed a large number of these animals in all sections of the state.

MANATIDÆ.

12. *Trichechus manatus* LINN.

Manatee.

This singular animal is found in large numbers about the inlets of Indian River, and Capt. Dummett informs me that he has captured specimens as far north as his place, which is within five miles of the head of the river. I have been informed by creditable authorities that it is remarkably abundant upon the western coast in the various rivers and creeks which abound between Tampa Bay and Cape Sable.

I have never seen it in Mosquito or Halifax Lagoons and am confident that it does not occur there. This species is said to feed upon the leaves of the mangrove during the night.

DELPHINIDÆ.

13. *Delphinus erebennus* COPE.

Porpoise.

A large number of porpoises which I take to be this species occur abundantly about the bays, salt water rivers and along the entire coast of Florida. It is also probable that a second species may be found.

VESPERTILIONIDÆ.

14. *Lasiurus Noveboracensis* GRAY.

Red Bat.

Common in the more northern sections of the state, frequenting the woods. During the day they rest hanging head downwards upon the leaf of a tree. Specimens captured are not only smaller in size than those from the north, but are much deeper in color; the fur, however, is generally tipped with ash.

15. *Scotophilus fuscus* H. ALLEN.

Carolina Bat.

Common throughout the northern sections, but more abundant in the vicinity of settlements.

I once captured a female specimen of this species which was heavy with young, placed her in a cage and left her. After an absence of an hour or so I returned and found that she had escaped, but had left a young one clinging to the woodwork on the side. The little thing was entirely naked, but was furnished with teeth, which it showed when handled and endeavored to bite, squeaking after the manner of all these animals. I replaced it in the cage, where it remained until night, but in the morning it was gone and I supposed that its mother had carried it away.

16. *Scotophilus Georgianus* H. ALLEN.

Georgia Bat.

Two bats which I have in my collection, that were shot about ten miles south of Salt Lake, I think are of this species. The specimens were taken in the evening and were flying about near a small pond in the piny woods.

17. *Nycticejus crepuscularis* H. ALLEN.

Mr. J. A. Allen in the "Bulletin of the Museum of Comparative Zoology" (Vol. ii, No. 3, p. 174) states that there is a specimen of

this bat in the museum at Cambridge which was collected in Florida by Mr. Charles Belknap.

18. *Corynorhinus macrotis* H. ALLEN.

Big-eared Bat.

Dr. Harrison Allen in his monogram of North American Bats (p. 55) cites a specimen of this species which was collected in Micanopy, Florida, by Dr. Bean.

NOCTILIONIDÆ.

19. *Nyctinomus nasutus* TOMES.

A bat was shot by a member of my party on the St. John's River, near Jacksonville, early in the winter, which I am confident was of this species. This specimen was unfortunately lost.

SHENODERMIDÆ.

20. *Artibeus perspicillatus* MAYNARD.

Tailless Leaf-nosed Bat.

While at Key West in the early winter of 1870, I observed several large bats flying about the city, which closely resembled in flight a species which I had seen in northern Florida two years before, but which flew so high that I was unable to shoot them. I was very anxious to obtain a specimen, but as shooting was prohibited in the streets of the city of Key West, and as I never saw the bats elsewhere on the island, feared that I should be obliged to go away without one. I was, therefore, agreeably surprised one morning to see a boy enter my room with a bat in his hand, which from its large size I knew could be no other than the species which I had so long desired to obtain. He said that he had found it hanging upon the leaf of a tree and had killed it with a piece of limestone. It is a leaf-nosed bat, and Dr. Harrison Allen has kindly identified it, from sketches sent to him, as the above species. This is, I think, the first instance on record of a bat of this form being taken on the Atlantic slope. This species, without doubt, inhabits the whole of Florida. They fly early in the evening, often before sunset, and, as has been remarked, usually very high.

None of the bats of Florida appear to hibernate, or at best they only remain quiet during an occasionally cold night.

SORECIDÆ.

21. *Blarina brevicauda et talpoides* BAIRD.

Mole Shrew.

I found a single specimen of this little species in an unused cistern,

at Miami. I have never seen it elsewhere in the state, although it probably occurs.

TALPIDÆ.

22. *Scalops aquaticus* FISCHER.

Shrew Mole.

Very common at Blue Spring, where they do considerable damage by disturbing the roots of vegetables and plants in the cultivated fields. They are also said to eat sweet potatoes. They form their burrows only an inch or two below the surface; throwing up ridges so that their presence is readily detected. This work is usually performed during the night.

SCIURIDÆ.

23. *Sciurus niger* LINN.

Southern Fox Squirrel.

Quite common in the piny woods, but I do not think that they are ever to be found in the hummocks. They feed upon the seeds of the pines and are therefore usually found in the tops of the trees which are commonly high; thus it is quite difficult to procure specimens, as on the approach of the hunter they conceal themselves among the thick foliage. They are extremely variable in color, specimens being found which exhibit all shades of coloration from pale rufous to black or dusky. The latter colors predominate, however. I think this species is confined to the more northern portions of the state, as I have never seen it at Miami.

24. *Sciurus Carolinensis* GMELIN.

Gray Squirrel.

Very abundant in the northern and central sections of the state, but singularly I did not see it at Miami, or among the Keys. They inhabit the hummocks and are seldom seen in the piny woods. They have much the same habits as those which inhabit New England. But I cannot now remember of ever having seen a nest of sticks and leaves such as this species construct in the north. Specimens are not only smaller in size, but are also more rufous than northern individuals. I have never seen a specimen of the black variety in Florida and am confident that it seldom, if ever, occurs.

GEOMYINÆ.

25. *Geomys pineti* RAFINESQUE.

Salamander.

This singular animal is confined to the more northern portions of the state, none being found south of Lake Harney. They inhabit the dry pine barrens, where in the process of burrowing they throw up

little mounds which in some sections are quite numerous. They are provided with large cheek pouches, with which they are said to convey the earth to the surface. The salamander is seldom seen abroad during the day, and if they ever leave the burrows it is in the night. When by any accident they appear above ground in the daylight, they seem confused, and may be readily captured.

MURIDÆ.

26. *Mus decumanus* PALLAS.

Brown Rat.

Found abundantly at Jacksonville, not only in the city, but on the neighboring plantations. I do not remember of having observed it elsewhere in Florida. I have never seen a specimen of the common mouse (*mus musculus*) in the state.

27. *Mus tectorum* SAVI.

White-bellied Rat.

The first instance of my finding this species in Florida was at Miami. There was an old cistern here which was formerly used by the troops which were stationed at old Fort Dallas. It was about ten feet deep, having cemented sides, and contained nearly two feet of water. Several species of the smaller *rodents* were frequently found dead and floating on the surface, having evidently fallen in while attempting to reach the water. Among them was a specimen of the white-bellied rat. As this was the only instance of my taking it in the southern section of the state I am unable to give any account of its habits there. But I found it in immense numbers at Salt Lake, inhabiting the moist prairies. Here they build nests near the tops of the grass, somewhat after the manner that the white-footed mouse builds in bushes at the North. This species was probably introduced into the country from the vessels of the early Spanish discoverers. In the old world it inhabits the thatched roofs of houses, from which we may infer that this species originally found its home among thick reeds or grasses, of which the roofing would probably be composed. Thus in the white-bellied rat of the wilds of Florida we have an example of a species instinctively returning to its primitive habits, even though its ancestors from force of circumstances have for many generations dwelt in a different manner.

28. *Hesperomys leucopus* WAGNER (= *cognatus*, *myoides* et *gossypinus* of authors).

White-footed Mouse.

This mouse is very abundant throughout all sections of the mainland of Florida, infesting the houses of the smaller settlements after

the manner of the common mouse. I have also known this to occur in New England, especially in isolated buildings. I can see no reason why the so-called *gossypinus* should be separated from *leucopus*, as I can find no constant character which would entitle it to a specific rank.

29. *Hesperomys aureolus* WAGNER.

Golden Mouse.

I obtained two specimens of this beautiful little mouse near Dummett's. Both of them were captured in a house where the common species (*leucopus*) was also abundant. This was in the spring of 1869, but since that time I have never been able to find another, and the people who brought the specimens informed me that they were quite rare.

30. *Hesperomys palustris* WAG.

Rice-field Mouse.

Audubon and Bachman say that a specimen was obtained in the Everglades of Florida by Dr. Leitner. I was aware of the existence of a small *rodent* in these immense marshes, but was unable to obtain specimens. They probably were of this species, however.

31. *Neotoma Floridana* SAY and ORD.

Wood Rat.

I saw nests of this species quite common about Jacksonville and Hibernia, but found none at Blue Springs or at any section south of this point. But Prof. Baird, in his "Mammals of North America," cites a specimen which was taken on Indian River by Dr. Wurdemann.

32. *Sigmodon hispidus* SAY and ORD.

Cotton Rat.

Common throughout the entire mainland of Florida, and appears to frequent the marshy places along the borders of rivers and other bodies of water. Whenever we encamped in such localities the cotton rats would gather around to feed upon remnants of scattered food. It appears to be nocturnal in its habits.

33. *Arvicola pinetorum* LECONTE.

Pine Mouse.

I insert this species on the authority of Audubon and Bachman, who assert that they have received it from Florida.

LEPORIDÆ.

34. *Lepus sylvaticus* BACHMAN.

Gray Rabbit.

Abundant throughout all sections of the mainland, frequenting the

pine woods as well as the hummocks. They appear to have much the same habits as at the north.

35. *Lepus palustris* BACHMAN.

Marsh Rabbit.

Common in the marshes of the St. John's River.

DIDELPHIDÆ.

36. *Didelphys Virginiana* SHAW.

Opossum.

Common throughout the mainland of the state, but does not occur on the Keys. These animals are a decided pest to the inhabitants, for they are prone to rob hen roosts. They are strictly nocturnal, remaining concealed in the trees during the day.

I have never met with an undomesticated animal so variable in color. Three specimens now before me exhibit the extremes. One, evidently an old individual, is gray throughout, inclining more to white, with no decided black markings, excepting the ears, legs and feet. The latter are *black to the nails* on some of the toes, while the other claws have a few white hairs at their bases. The tail is entirely white. Another, younger, has dirty white fur with black tips. Numerous long white hairs appear over the entire upper surface of the body, giving the animal a singular appearance. The hind legs and feet are black, as in the other specimens, to the nails, excepting a few white hairs at their bases. The front legs and feet are black nearly to the claws. The ears are tipped with white, while the tail is black for the basal third, the remainder white. Another young specimen has the base of the fur white, but with the tips so decidedly dark that it nearly conceals the former color, and no one would hesitate to call it a black opossum. Yet its toes are white, there are white markings about the head, and a stripe on the belly is white, with a yellow suffusion between the fore legs. Only one-fourth of the basal portion of the tail is black.

These three represent the widest variation I have ever met with, in point of color, and Mr. J. A. Allen, in the "Bulletin of the Museum of Comparative Zoology" (p. 185), and Dr. Elliott Coues, in the "Proceedings of the Academy of Natural Sciences of Philadelphia," for May, 1871, assert that the skulls are also extremely variable.

APPENDIX.

Mammals which were formerly found in Florida.

According to Bartram the beaver (*Castor Canadensis*) was formerly found in the state. He makes mention of it in his travels in Florida, published in 1791.

The historians of De Soto's travels speak of herds of wild cattle being found in Florida. They probably allude to the buffalo (*Bos Americanus*), which without doubt extended its range to the prairies of the west coast.

The last mentioned authors and other early writers also speak of a wild dog as inhabiting Florida. They cannot mean the wolf or the fox, for these are included in their lists of the animals of the then new country. It is possible that the singular species of dog now used by the Seminoles of Florida was once wild.

Domesticated species found in a wild state.

There are hundreds of cattle in Florida which are now perfectly wild and have been in this condition since the first Indian war, at which time they escaped from their owners. They generally inhabit what is termed the "Turnbull Swamp," a wide expanse of waste land which lies about the head of Indian River. But I have seen them in the interior, near the head waters of the St. John's River. They are rapidly becoming exterminated, however, as the settlers consider them common property and shoot them whenever they can.

Hogs are also found wild in some sections, but not in any great numbers. The usually black color of the domestic hogs of Florida has been noticed by Darwin in his fifth edition of "Origin of Species" (p. 26) on the authority of Prof. Wyman. He says that the light colored hogs contract a disease from eating the paint-root (*Lachnanthes tinctoria*) which causes their hoofs to drop off, whereas black ones are not affected by it. I have carefully inquired into this matter and have not only observed for myself, but conversed with many intelligent men upon the subject. I find that a slight error has been made in the statement. The color of the hair or bristles has nothing to do with the health of the animal, but its *hoofs* must be black in order that it may eat the paint root with impunity. I have seen black pigs having white feet lame from this cause, and this is the usual opinion of all the pig raisers with whom I conversed. Yet this does not materially affect Mr. Darwin's argument, which is that the mere existence of a certain plant causes the hogs of this section to assume a dark color, for if the hoofs are dark the whole animal is usually dark. That the case may be made seemingly stronger I will say, that in some sections of Florida, where the paint root does not grow, white hogs are as numerous as black ones.

I find that there is another reason why the settlers select hogs which are of a dark color. This is that they stand a better chance of escaping from bears than white ones, as they are less conspicuous, especially in the night. Now I can go a step farther and show that

the hogs of themselves assume a protective color. It is noticeable that hogs which have lived for generations in the piny woods are of a reddish hue, corresponding exactly with the color of the fallen pine leaves, so that it is almost impossible to detect one at a little distance when it is lying upon a bed formed of them.

This instance, together with the fact that the black hoof is a safeguard against the poisonous effects of the paint root, seems a conclusive argument in favor of the theory that the Florida hogs have made a slight advance towards forming a new variety or species.

But I look upon it in another way, and see in these instances but illustrations of a law in nature which grants to nearly all animals the power of assuming protective colors, under certain circumstances, but in a limited degree. This is to be seen in many cases among animals, the most familiar of which is that of the northern hare (*Lepus Americanus*), which in autumn puts off its brown summer dress and takes on one of the color of the snow, among which it has to live throughout the winter. The hogs of Florida return to the mixed colors in sections where the paint root does not grow and where no pains are taken to select black ones, or where their food and surroundings are varied. There are apparently few or no analogous instances to the black hoofs being a protection against poison, yet I will venture to say that did we understand the entire economy of nature, we should find many similar ones.



QUARTERLY MEETING, WEDNESDAY, AUGUST 14, 1872.

THE meeting was held at 3 P. M. The President in the chair.

Stephen P. Driver of Salem and Charles F. Crocker of Lawrence were elected resident members.



REGULAR MEETING, MONDAY, OCTOBER 21, 1872.

First evening meeting, present season, commenced at 7 30 P. M. The President in the chair. Records read.

The SECRETARY announced the following correspondence :—

From American Geographical Society, Sept. 18; Belfast Naturalists' Field Club; Brooklyn Mercantile Library Association, Oct. 8; Buffalo Historical Society, Sept. 12; Edinburgh Royal Society, March; Iowa State Historical Society, Aug. 3; Leeds Philosophical and Literary Society, Sept. 4; London Society of Antiquaries, Aug. 31; Minnesota Historical Society, Aug. 22; Maryland Historical Society, Aug. 12; Moravian Historical Society, Aug. 9; New Jersey Historical Society, Aug. 30, Sept. 3; New York, Cooper Union, Sept. 6, Oct. 15; New York Genealogical and Biographical Society, Aug. 21; New York Lyceum of Natural History, Oct. 7; New York State, Aug. 30; Ohio Historical and Philosophical Society, Aug. 5, Sept. 6; Yale College, Corporation, Sept. 23; Ammiden, P. R., Boston, Aug. 22; Anthony, H. B., Providence, Aug. 8; Babson, J. J., Gloucester, Aug. 12; Boow, E. P., New York, Sept. 23, Oct. 4, 17; Chever, D. A., Denver, Col., Oct. 13; Clark, B. H., Rochester, N. Y., Sept. 20; Crocker, Chs. F., Lawrence, Aug. 17; Cram, Milo T., Holyoke, Mass., Aug. 19; Dall, C. H., Boston, Oct. 11; Drake, S. G., Boston, Sept. 13; Frary, Lucius H., Middleton, Sept. 3; Hanaford, P. A., New Haven, Conn., Sept. 23; Higginson, T. W., Newport, R. I., Oct. 20; Hough, F. B., Lowville, N. Y., Aug. 7; Marston & Prince, Lowell, Aug. 20; Perry, W. S., Geneva, N. Y., Oct. 1; Roundy, Henry, Salem, Sept. 28; Venable, J. E., Paducah, Ky., Sept. 16; Yeomans, W. H., Columbia, Conn., Aug. 8, Oct. 17.

A letter was read from W. A. WILLIAMS, engineer on the Copiapo Railroad, to Capt. Robert Manning, accompanying a box of fossil shells and radiates, some found above the sea at Caldera, in extensive beds, at four hundred feet above sea level; the others at Molle, about one hundred miles from the coast, at a height of five thousand feet above the sea, where the ground is strewn with them.

Daniel Varney, Charles Baker and Catherine T. Woods, all of Salem, were elected resident members.

Dr. J. L. Smith, Louisville, Ky.; Prof. E. B. Andrews, Marietta, Ohio; Prof. E. T. Cox, Indianapolis, Ind.; Dr. G. M. Levette, Indianapolis, Ind.; J. Collett, Esq., Eugene, Vermilion Co., Ind.; Prof. C. A. White, Iowa City, Iowa; J. L. Waters, Esq., Chicago, Ill.; Col. J. W. Foster, Chicago, Ill.; Prof. C. G. Swallow, Columbia, Mo.; Prof. J. S. Newberry, New York, N. Y.; Prof. A. Winchell, Ann Arbor, Mich.; Prof. Raphael Pumpelly, Cambridge, were elected corresponding members.

THE LIBRARIAN reported the following additions :—

By Donation.

ANDREWS, MISS. Manual for the General Court, 1864, 1 vol. 12mo. Bland's Treatise of Military Discipline, 1 vol. 8vo. London, 1727. Report of the Comptroller of New York, 1854, 1 vol. 8vo. Report of the Portsmouth Relief Association, 1855, 1 vol. 8vo. The Railroad Jubilee, 1851, 1 vol. 8vo. Patent Office Report, 1848, 1 vol. 8vo. Foster's Book Keeping, 1 vol. 8vo. Pickering's Vocabulary, 1 vol. 8vo. Miscellaneous pamphlets, 16.

BOLLES, E. C. Miscellaneous pamphlets, 29.

BROOKS, MRS. HENRY M. Woman's Journal, 26 nos.

BUTLER, B. F., of U. S. H. R. Message and Documents, 1871-2, 5 vols. 8vo. Report of the Committee on Agriculture, 1869, 1870, 2 vols. 8vo. Ku-Klux Conspiracy, 13 vols. 8vo. Patent Office Reports, 1868, 4 vols. 8vo. Smithsonian Report, 1870, 1 vol. 8vo. Mineral Resources West of the Rocky Mts., 1871, 1 vol. 8vo. Report on Commerce and Navigation, 1870, 1 vol. 8vo. Congressional Globe, 3rd Sess., 41st Cong., 1870-1, 3 vols. 4to. Statistics of Population. Ninth Census. Tables I-VIII. 1 vol. 4to, 1870. Report on Investigation and Retrenchment, 8vo pamph. Report of the Commissioners of Education, 1870-1, 2 vols. 8vo. Explorations in Nevada and Arizona, 1871, 1 vol. 4to.

CHANDLER, Z., of U. S. S. Proceedings of the National Union Republican Convention held at Phila., June 5, 6, 1872, 1 vol. 8vo.

CLARK, B. H., of Rochester, N. Y. Directories of Rochester for 1870, 1871, 2 vols. 8vo. Miscellaneous pamphlets, 5.

COLE, MRS. N. D. Salem Gazette, 70 nos. Miscellaneous pamphlets, 20.

CONANT, W. P. Ninth and Eleventh Report of the St. Louis Agricultural and Mechanical Association, 1870, 1872, 2 vols. 8vo. Miscellaneous pamphlets, 6.

CUTTER, A. E., of Charlestown, Mass. Proceedings at the Dedication of the Soldiers' and Sailors' Monument at Charlestown, June 17, 1872. 8vo pamph.

DALAND, W. S., of New York. Directory of New York City, 1871, 1 vol. 8vo.

DE LORIMER, W. K., of Dubuque, Iowa. Iowa State Gazetteer, 1865, 1 vol. 8vo.

GILMORE, L. B., of Ann Arbor, Mich. Directory of Ann Arbor, 1868, 1 vol. 8vo.

HAWKS, J. M., of Pensacola, Fla. The Florida Gazetteer, 8vo pamph., 1871.

KELLOGG, C. A. & CO., of Rochester, N. Y. New York State Directories, 1864, 1869, 2 vols. 8vo. Directory of over one hundred Cities and Villages in the State of New York, 1869-70, 1 vol. 8vo. Directories of Central New York, 1865, 1867, 2 vols. 8vo. Buffalo City Directories, 1866, 1867, 1869, 1870, 4 vols. 8vo. Rochester City Directories, 1864-5, 1866-7, 1867-8, 1870, 4 vols. 8vo.

KIMBALL, JAMES. Lawrence Directories, 1857, 1859, 2 vols. 16mo.

LEE, JOHN C. Commercial Bulletin, Aug. 10, 17; Sept. 7, 14, 21, 28; Oct. 5, 1872.

LOUBAT, ALPHONSE, of New York. Vine Dresser's Guide, 1 vol. 12mo.

MANNING ROBERT. Miscellaneous pamphlets, 65.

MC. CREERY, J. L., of Dubuque, Iowa. Directory of Dubuque, 1865-6, 1 vol. 8vo. Miscellaneous pamphlets, 6.

MOORE, CHAS. B., New York. Indexes. Town of Southold, L. I. 8vo pamph.

NATIONAL ASSOCIATION OF WOOL MANUFACTURES. Bulletin for Apr., Sept., 1872.

OLIVER, HENRY K. Patent Office Reports, 1847, 1850-1, 1851, 1852-3, 1853, 1854, 1856, 1857, 1858, 1859, 1861, 13 vols. 8vo. Message and Documents, 1867-8, 2 vols. 8vo. Auditor's Report, 1867, 1 vol. 8vo. Hawaiian Club Papers, Oct. 1868, 1 vol. 8vo. Eighth Annual Report of the Insurance Commissioners, 1 vol. 8vo. Key to the Element of Arithmetic, by P. E. Chase, 1 vol. 12mo. Miscellaneous pamphlets, 352.

[To be continued.]

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4. SALEM, MASS., NOVEMBER, 1872. No. 11.

One Dollar a Year in Advance. 10 Cents a Single Copy.

DR. PACKARD gave the following account of recent

EXPLORATIONS OF ST. GEORGE'S BANK.

During the past summer Prof. S. F. Baird, the U. S. Fish Commissioner, with the assistance of Prof. Verrill, fitted up an expedition to explore St. George's Banks with the dredge, for the sake of ascertaining the nature and quantity of the animals living upon and about these shoals, to which our Cape Ann fishermen annually resort for cod and halibut. Prof. Peirce, the Superintendent of the Coast Survey, who had detailed the steamer "Bache," Commander Howell, to make soundings on and about the bank, generously made accommodations aboard the steamer for the dredging party; and two naturalists, Messrs. S. I. Smith and O. Harger, assistants in the Yale College Museum, spent a portion of September aboard, and made several hauls with the dredge on the bank in about twenty fathoms, and again on the eastern edge of the bank in sixty-five fathoms, while

the most interesting results were obtained farther east towards the Gulf Stream at a depth of four hundred, and four hundred and thirty fathoms. At this depth the dredge brought up about forty species of invertebrate animals, among them *Schizaster fragilis*,* an arctic European sea urchin, *Eupyrgus scaber*, an arctic holothurian, and numerous worms, together with *Pecten pustulosus* Verr., not before found on our coast. On the sandy bottom of the top of the bank the large *Pecten tenuicostatus* was abundant.

The season being late, they were obliged to relinquish the work for their duties at New Haven, and Messrs. Packard and Cooke, of the Peabody Academy at Salem, on the 11th of October, ran out from Boston in the Bache, and were able to make one day's dredging on the northeast end of the bank, in forty and forty-five fathoms, on the sandy and gravelly bottom near the crown of the bank, at or near the fishing grounds for cod and halibut; and then at the bottom of the bank in eighty-five, one hundred and ten, and one hundred and fifty fathoms, respectively, on a sandy, muddy bottom. The first haul of the dredge, made in one hundred and ten fathoms, proved exceedingly rich, bringing up numerous shells and worms, though few crustacea, but several spatangoids (*Schizaster fragilis*) and several sea pens (*Pennatula aculeata*) which had been dredged for the first time on this coast by Mr. Whiteaves in the Gulf of St. Lawrence in one hundred and sixty fathoms. The hauls made in one hundred and fifty fathoms also revealed these forms, and a singular starfish (*Solaster furcifer*), and *Archaster arcticus*, an additional species of

*This and the other species mentioned were identified by Prof. A. E. Verrill, who is publishing a résumé of the results in the current numbers of the American Journal of Science and Arts.

sea pen (*Virgularia Lyngmanni*) and other interesting mollusks and worms; while two actiniæ, one an enormous *Cerianthus* (*C. borealis*), ten inches in length and inhabiting a tough, slimy tube, and the other, *Bolocera Tuediæ* were discovered, together with *Thyone scabra*, and a Norwegian shell, *Arca pectunculoides* and *Neæra arctica*, and several new species of mollusks and worms. The marine fauna of this bank seems to be much like that of the Bay of Fundy, the Gulf of St. Lawrence, the banks of Newfoundland, and, in a less degree, the coast of Labrador. The discovery of the Pennatula, Schizaster and *Arca pectunculoides* also makes its relations with that of Norway intimate, and suggests that the assemblage of life at this region is a continuation of the Norwegian and arctic European deep sea fauna, and that it represents a continuous stream of arctic life pervading the ocean at great depths wherever the water is of sufficiently low temperature, from the polar regions to Cuba and Florida. The great abundance of life about the bank seems to show that the food for our edible fishes is in this region almost inexhaustible.

After exploring this bank the Bache pushed on nearly a hundred miles farther east and with some difficulty, owing to an approaching gale from the southeast, obtained soundings in thirteen hundred fathoms. The sea rising made dredging impossible, and the steamer was obliged from rough weather to run into Provincetown, and the weather continuing boisterous, to the great disappointment of all, made any further attempts impracticable. Every possible facility was extended by Commander Howell and officers Jacques, Hagerman, Jacob and Rush, who personally superintended the dredging operations, which were carried on by night as well as by day, and to them the success of the explorations was largely due.

Mr. F. W. PUTNAM of Salem made the following communication on an

ANCIENT INDIAN CARVING.

By the kindness of Dr. Palmer of Ipswich, I am enabled to exhibit a very interesting carved stone, which was found by an elderly lady while hoeing potatoes in her garden located at Turkey Hill, Ipswich.

Turkey Hill, situated between two small streams, and not far from the centre of the town, is a collecting ground well known to our local archæologists from the large number of stone implements that have been found in its immediate vicinity, and is especially noted for the small arrowheads of white quartz and other stone that have been found there in considerable numbers. The discovery of the carved stone now exhibited will further identify the locality as one of interest to archæologists.

This stone was evidently carved with care for the purpose of being worn as an ornament, and was probably suspended from the neck. It is of a soft slate, easily cut with a sharp, hard stone. The markings left in various places by the carver, showing where his tool had slipped, indicate that no very delicate instrument had been used, while the several grooves, made to carry out the idea of the sculptor, indicate as plainly that the instrument by which they were made, had, what we should call, a rounded edge, like that of a dull hatchet, as the grooves were wider at the top than at the bottom, and the striæ show that they were made by a sort of sawing motion, or a rubbing of the instrument backwards and forwards. In fact, the carver's tool might have been almost any stone implement, from an arrowhead to a skin scraper, or any hard piece of roughly chipped stone.

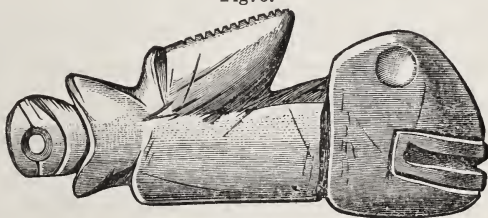
The figure on the opposite page represents the stone of natural size, its total length being two and a half inches.

It is of general uniform thickness, about one-fifth of an inch, except where the angles are slightly rounded off on the front of the head and on the abdominal outline, and the portion representing the forked tail, or caudal fin, which is rapidly and symmetrically thinned to its edges, as is the notched portion representing the dorsal fin.

The carving was evidently intended to represent a fish, with some peculiar ideas of the artist added and several important characters left out. The three longitudinal grooves in front represent the mouth and jaws, while the transverse groove at their termination gives a limit to the length of the jaw, and a very decided groove on the under side di-

vides the under jaw into its right and left portions. The eyes are represented as slight depressions at the top of the head.

Fig. 5.



Natural size.

The head is separated from the abdominal portion by a decided groove, and the caudal fin is well represented by the forked portion, from the centre of which the rounded termination of the whole projects. In this part there is an irregularly made hole of a size large enough to allow a strong cord to pass through for the purpose of suspension. The portion of the sculpture rising in the place of a dorsal fin is in several ways a singular conception of the ancient carver. While holding the position of a dorsal fin, it points the wrong way, if we regard the portion looking so much like a shark's tooth as intended to represent the fin as a whole. It is very likely that the designer wished to show that the fin was not connected with the head and, as he was confined by the length of the

piece of stone, after making the head so much out of proportion, he was forced to cut under the anterior portion of the fin in order to express the fact. If we regard it in this light, the notches on the upper edge may be considered as indicating the fin rays; but the figure best shows the character of the sculpture, and persons interested can draw their own conclusions.

The symmetry of the whole carving is well carried out, both sides being alike, with the exception that the raised portion at the posterior part of what I have called the dorsal fin is a little more marked on the left side than on the right, and the edge on the same side is surrounded by a faint, irregularly drawn line.

The carving was, I think, unquestionably made by an Indian of the tribe once numerous in this vicinity and, as it was almost beyond a doubt cut by a stone tool of some kind, it must be considered as quite an ancient work of art, probably worn as a "medicine," and possibly indicated either the name of the wearer or that he was a noted fisherman.

Additions to the LIBRARY announced.

(Continued from page 152.)

By Donation.

OSGOOD, ALFRED, of Newburyport, Mass. History of Newburyport, by Mrs. E. Vale Smith, 1 vol. 8vo. Reports of the School Committee of Newburyport, 1841-1871, inc. 26 Nos.

PARSONS, C. W., of Providence, R. I. Hydrate of Chloral, by donor, 8vo pamph.

PATCH, CHAS., of Hamilton, Mass. Miscellaneous Almanacs, 54.

PERKINS BROS., of Sioux City, Iowa. Directory of Sioux City, 1871-2, 1 vol. 8vo.

PERKINS, GEO. A. The Spirit of Missions, 8 nos.

PERRY, W. S., of Geneva, N. Y. Journal of the General Convention of the Protestant Episcopal Church, 1868, 1871, 2 vols. 8vo. Vestry Songs, 1 vol. 12mo. Trinity Psalter, 1 vol. 12mo. Miscellaneous pamphlets, 310.

STONE, B. W. Directory of New York City, 1869, 1 vol. 8vo. First Annual Report of the Board of Commissioners of the Department of Public Parks, 1 vol. 8vo. Miscellaneous pamphlets, 8.

SUMNER, C., of U. S. S. Letter to the Colored Citizens, June 29, 1872, 8vo pamph.

TENNEY, RICHARD, of Georgetown, Mass. Catalogue of the Georgetown Peabody Library, 1 vol. 8vo. The Peabody Memorial Church in Georgetown, 1 vol. 8vo.

TOWNE, JOSEPH H. Mass. Register and Business Directories, 1852, 1853, 1854, 1855, 1858, 5 vols. 8vo. Condition of the Banks, 1857, 1858, 1860, 1861, 4 vols. 8vo. N. E. Mercantile Directory, 1849, 1 vol. 8vo. Comptroller's Report of the Currency, 1867, 1 vol. 8vo. Finance Reports, 1852-3, 1855-6, 2 vols. 8vo. Mass. State Record, 1851, 1 vol. 12mo. Blue Book, 1 vol. 12mo. Mass. Registers, 1830, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 17 vols. 16mo. Descriptive Register of Genuine Bank Notes, 1 vol. 4to. Hodge's American Bank Note, 2 vols. 4to. Miscellaneous pamphlets, 100.

U. S. PATENT OFFICE, of Washington, D. C. Official Gazette, July 23, Aug. 13, 20, 27, Sept. 3, 10, 17, 24, 1872.

WILLSON, E. B. Address by C. A. Bartol before the Essex Conference, Feb. 28, 1872. 8vo pamph.

WITHALL, ELIJAH, of Rochester, N. Y. Annual Catalogues of the University of Rochester, 1859-1872. 13 pamphlets.

YEOMANS, W. H., of Columbia, Conn. Mineral Resources of the U. S., 1867, 1 vol. 8vo. Report of the Conn. Board of Agriculture, 1871, 1 vol. 8vo. Reports of the Committee on the Conduct of the War, 1 vol. 8vo. Miscellaneous pamphlets, 28. Diplomatic Correspondence, 1865, 4 vols. 8vo.

By Exchange.

ACADÉMIE IMPÉRIALE DES SCIENCES BELLES-LETTRES ET ARTS IN BORDEAUX. Actes, 3e Série, 32e Année, 1870.

ACADEMY OF NATURAL SCIENCES OF PHILA., Proceedings of. Jan., Feb., Mch., Apr., 1872.

AMERICAN ACADEMY OF ARTS AND SCIENCES OF BOSTON. Proceedings of, pp. 137-296 of vol. viii. 1869-70.

AMERICAN ANTIQUARIAN SOCIETY AT WORCESTER, Proceedings of, Apr., 1872.

AMERICAN PHILOSOPHICAL SOCIETY OF PHIL., Proceedings of, Jan.-June, 1872.

BIBLIOTHÈQUE UNIVERSELLE ET REVUE SUISSE. Archives des Sciences, Physiques et Naturelles, Juin, Juillet, Août. Nos. 174-6, 1872.

CROSSE ET FISCHER. Journal de Conchyliologie. 3e Série, Tome xii. No. II, 1872.

INSTITUT HISTORIQUE IN PARIS. L'Investigateur, 4e Série, Tome x, Liv. 426, 427, 1870.

KONGLIGA DANSKE VIDENSKABERNES SELSKAB IN KJÖBENHAVN. Oversigt, 1871. No II. 8vo pamph.

KONGLIGA VETENSKAPS-SOCIETEN IN UPSAL. Nova Acta. Vol. viii, Fasc. 1, 1871. 4to pamph. Bulletin Météorologique Mensuel, vol. i, Nos. 1-12, 1868-9. Vol. iii, Nos. 7-12, 1871.

LITERARY AND PHILOSOPHICAL SOCIETY OF LIVERPOOL, Proceedings of the. Vol. xxv, 1870-71. 1 vol. 8vo.

NATURWISSENSCHAFTLICHEN GESELLSCHAFT "ISIS" IN DRESDEN. Sitzungs-Berichte, Jan., Feb., März, 1872.

NATURWISSENSCHAFTEN VEREIN IN BREMEN. Abhandlungen, Bd. III, Heft 1, 1872.

NEW JERSEY HISTORICAL SOCIETY, Proceedings of. 2nd Series, vol. iii, No. 1, 1872.

PEABODY INSTITUTE, Peabody, Mass., Twentieth Annual Report of the Trustees of the. 8vo pamph., 1872.

PHYSIKALISCH-MEDICINISCHE GESELLSCHAFT IN WURZBURG. Verhandlungen, Neue Folge, Bd. II, 4 Heft, 1872.

RHODE ISLAND HISTORICAL SOCIETY, Proceedings of, 1872. 8vo pamph.

SOCIÉTÉ D'ACCLIMATION PARIS. Bulletin Mensuel. 2me Série, Tome ix, 1872. Nos. 2, 3, 4, 5. 4 pamphlets.

SOCIÉTÉ D'ANTHROPOLOGIE PARIS. Bulletins, Tome vi, 11e Série, 2e Fascicule, 1871. 8vo pamph.

SOCIÉTÉ VANDOIZE DES SCIENCES NATURELLES OF LAUSANNE. Bulletin, vol. xi, Nos. 66-67. 2 pamphlets, 1871-2.

ST. GALLISCHE GESELLSCHAFT IN ST. GALLEN. Bericht, Vereinsjahres, 1870-1. VEREINS FÜR ERDKUNDE IN DARMSTADT. Notizblatt, Heft X, iii Folge. Nos. 109-121, 1871.

VERMONT STATE LIBRARY. Thirteenth and Fourteenth Registration Reports, 1869, 1870. 2 vols. 8vo. Catalogue of the Vermont State Library, Sept. 1, 1872. 1 vol. 8vo. Governor's Message of the State of Vermont, Oct., 1872. 8vo pamph.

WISCONSIN STATE HISTORICAL SOCIETY, Collections of, vol. vi, 1869-72, 1 vol. 8vo.

ZOOLOGISCHE GESELLSCHAFT. Zoologische Garten, xiii Jahrg., nos. 1-6. Jan.-Juli, 1872.

PUBLISHERS. American Naturalist. Canadian Naturalist. Christian World. Francis's Catalogue. Gardener's Monthly. Gloucester Telegraph. Hardwicke's Science Gossip. Haverhill Gazette. Ipswich Chronicle. Land and Water. Lawrence American. Little Giant. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Salem Observer. Silliman's Journal. Western Lancet.



REGULAR MEETING, MONDAY, NOV. 4, 1872.

Meeting this evening at 7.30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence :—

From U. S. Dep't. of Interior, Washington, Oct. 28; Bergen, Norway, The Museum at, Sept. 22; Ipswich, Lyceum, Oct. 24; New York, Cooper Union, Oct. 23; Smithsonian Institution, Washington, Aug. 14; Boow, E. P., New York, Oct. 24, 31; Chever, D. A., Denver, Col. Ter., Oct. 28; Cleaveland, N., Westport, Conn., Oct. 31; Ellis, George E., Boston, Oct. 29, Nov. 2.

The LIBRARIAN reported the following additions :—

By Donation.

COOPER UNION, of New York. Report of the Metropolitan Board of Health, 1869, 1 vol. 8vo. Nineteenth Annual Report of the Prison Association of New York, 1864, 1 vol. 8vo. Tehuantepec Railway Company, 1869, 1 vol. 8vo. Annual Report of the Board of Education, 1859, 1 vol. 8vo. Report of the Board of Immigration of the State of Missouri, 1865-66, 1 vol. 8vo. Comptroller Report of City of New York, 1864, 1 vol. 8vo. Miscellaneous pamphlets, 11.

GILLIS, JAMES A. German Encyclopädie, 1 vol. 4to. Maps to Gibson's Report, 1 vol. 8vo. French Statistics, 1 vol. 8vo. National Magazine and Industrial Record, 1845, 1846, 2 vols. 8vo. Archivo Americano, 1 vol. 4to. Spurzheim's Outlines of Phrenology, 1 vol. 12mo. Spanish Teacher, 1 vol. 16mo. German Phrase Book, 1 vol. 12mo. Tariff, by James Campbell, 1 vol. 8vo. Revenue Book, by A. Jones, 1 vol. 8vo. Flügel's Dictionnaire, 1 vol. 8vo. Nature Displayed, 2 vols. 8vo. Patent Office Report, 1848, 1 vol. 8vo. Commerce and Navigation of the U. S., 1830-45, 8 vols. 8vo. Tobacco Statistics, 3 vols. 8vo. Obituary Addresses on the Death of Hon. W. R. King, 1 vol. 8vo. Tables showing the Trade of the United Kingdom with different Foreign Countries and British Possessions, 1834-41. Commercial Tariffs and Regulations, 5 pamphlets. Commercial and Financial Legislation of Europe and America, 2 vols. 8vo. The Daily Union, 27 nos. Tableau Général du Commerce de la Belgique, 2 vols. folio. The Southerner, 38 nos. Miscellaneous pamphlets, 179.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 41.

KIMBALL, JAMES. Abstract of the Seventh Census, 1 vol. 8vo. I. O. of O. F., Digest of the Laws of the Order, 1 vol. 12mo. Miscellaneous pamphlets, 70.

LEE, JOHN C. Commercial Bulletin, Oct. 12, 19, 1872.

PATCH, G. W., of Marblehead, Mass. Manuals for the General Court, 1863, 1864, 1866, 3 vols. 16mo. Christian Union, 60 nos. Independent, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868. Our Dumb Animals, 12 nos. The Macedonian and Home Mission Record, 37 nos. American Missionary, 46 nos. Miscellaneous pamphlets, 90.

U. S. DEPARTMENT OF THE INTERIOR. House Miscellaneous, 2d Sess., 41st Cong., 1869-70, 5 vols. 8vo. 3d Sess., 41st Cong., 1870-71, 2 vols. 8vo. Foreign Relations of the U. S., 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Finance Report and Report of Comptroller of the Currency, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Report of the Department of Agriculture, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Reports of the Committee of the House of Reps., 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Senate Documents, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Senate Miscellaneous, 2d Sess., 41st Cong., 1869-70, 1 vol. 8vo. 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Senate Journal, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Senate Reports, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. House Journal, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Executive Documents, 3 Sess., 41st Cong., 1870-71, 5 vols. 8vo. Report of the Secretary of War, 3d Sess., 41st Cong., 1870-71, 2 vols. 8vo. Report of the Secretary of the Navy and Postmaster General, 3d Sess., 41st Cong., 1870-71, 1 vol. 8vo. Patent Office Report, 1870-71, 1 vol. 8vo. Report of the Secretary of the Interior, 3d Sess., 41st Cong., 1870-71, 2 vols. 8vo.

U. S. PATENT OFFICE. Official Gazette, Oct. 8, 1872.

By Exchange.

BOSTON PUBLIC LIBRARY. Bulletin for Oct., 1872. 8vo pamph.

IOWA STATE HISTORICAL SOCIETY. The Annals of Iowa, July, 1872. 8vo pamph.

NEW ENGLAND HISTORIC-GENEALOGICAL SOCIETY. Register and Antiquarian Journal, Oct., 1872. Vol. xxvi, No. IV. 8vo pamph.

NEW YORK GENEALOGICAL AND BIOGRAPHICAL SOCIETY, Record of. Oct., 1872. 8vo pamph.

PUBLISHERS. American Journal of Science and Arts. American Naturalist. Christian World. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Ipswich Chronicle. Land and Water. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

THE ORIGIN OF SURNAMES.

A communication was read from GEORGE H. DEVEREUX of Salem on the origin of surnames. This subject is receiving considerable attention, especially since so many persons devote their time and leisure to genealogical and historical researches, and, from the records and papers on file in our various state, town, parish and other offices, have gleaned and published many facts that will tend to elucidate more fully the history of the past and delineate the character of the early pioneers and their immediate descendants in the settlement of this country.

The paper was an ably prepared document and commenced with a few brief remarks upon general language. It then proceeded to the special consideration of the names of persons and places, as now extant in the English language. We give the following condensed synopsis of this portion.

All names had, originally, a significance of their own, derived from some peculiarity of person, place or prominent circumstance. We have grown so familiar with them, as merely arbitrary designations, that we pay no heed to this special meaning, which no longer has, in most cases, any particular applicability; and we talk of a man called Lion or Hare, King or Straw, without a moment's thought of the idea once conveyed when the name was primarily given. The meaning of many biblical, classic, Saxon, Italian, French and other designations was then stated, as well as some of Puritanic and fanciful origin. In the earliest times no person had more than one name, as John, Peter, Albert, etc. But in process of time it was found necessary to distinguish individuals of the same designation, of whom there would soon be many in every neighborhood, by superadded descriptions.

These were what we call surnames and became, by transmission from father to son, family names. The various modes in which these originated and grew up were then systematically explained.

The most obvious would be from personal peculiarities. As, of two Johns in one neighborhood, one would soon become known as John the Long, and another as John the Short. Hence we get all the Shorts, Longs, Whites, Blacks, Browns, etc.

Next, children came to be particularized after their parents, as John, Robert's son, or John Robertson, James, William's son, or James Williamson, and so on. Again, men got names from their occupations, as John the Smith or soon simply John Smith, Hugh the Miller or Hugh Miller. So in other languages, as the Scotch synonymes of Baxter or Baker, Thaxter or Thacher, etc.

Then we find many getting titles from their residence. Noblemen, it is well known, are called from their estates. So through all ranks, as Peter of the Lane, Sam on the Hill, Jem of the Meadows, etc., and in this way grow up in time countless family appellatives, as Lanes, Hills, Meadows, Heaths, Dales, Downs, Forests, Brooks, Rivers and the like. Of this class, too, are Greenwood, Underwood, Redfield and many similar.

Parts of the human body and various objects of nature, plants, animals, even minerals, have by some singular association, hopeless now to trace, given special designations to individuals first, and then to families. For instance, Head, Leg, Foote, Blood, Ash, Birch, Root, Branch, Hedge, Straw, Peach, Pear, Thorn, Berry, Rice, Millet, Hare, Fox, Badger, Bull, Partridge, Sparrow, Bird, Drake, Fish, Pollock, Herring, etc., and Stone, Jasper, Marble, Jewell and many more of similar character.

Very many of these names are, when we consider their actual signification, extraordinary and surprising, and we cannot but wonder how a man could ever come to be called a Wolf, a Hog, a Crane, a Gull, or by so curious a title as Moon, Salt, Doll, Pinchbeck and others quoted equally strange. These anomalies and eccentricities were analyzed and explained by references to heraldic bearings, jocular and familiar sobriquets or nicknames, corruptions, abbreviations, etc. A great many singular and striking instances were given, and elucidated by explanations yet available in history, social customs and records and derivations of various sorts, from which light may yet be thrown upon these apparent vagaries. A large number, seemingly utterly incomprehensible at first sight, were traced to their incidental origins, and the curious transformations they had undergone clearly developed. A long list was also given of grotesque and unaccountable appellatives, of the origin of which no reasonable conjecture seems to be now possible.

The nomenclature of places, towns, cities, castles, estates, etc., was fully investigated, and followed up through contractions and the corruptions of time to its sources in the primitive Celtic of the Britons, the Saxon, the Latin terms of the Romans and the Norman French introduced by the conquest. The frequent transfer of these to family names was also illustrated by examples. The changes effected by translation into other languages were considered too, and made plain by numerous instances.

The system of nomenclature of the Greeks and Romans was briefly described, and its analogies with the customs of later times noticed.

It is impossible in this compendium to note even all the leading points of the essay. Of course, we cannot recapitulate here the large number of carefully collected

and arranged illustrations; or follow out the theory and state the conclusions deduced, either upon general or special instances. Our narrow space is inadequate to give a competent view of a thoroughly digested and systematic analysis of such a subject.



REGULAR MEETING, MONDAY, NOV. 18, 1872.

Meeting this evening at 7.30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence:—

Bremen, Naturwissenschaft verein, Sept. 7; Brunn, Naturforschende verein, Apr. 2; Cherbourg, Société Nationale des Sciences Naturelles, Juillet; Chicago Academy of Sciences, Oct. 8; Danvers, Peabody Institute, Nov. 7; Sacramento, Agassiz Institute, Nov. 1, 3; Chipman, R. M., Lisbon, Conn., Nov. 8; Foster, J. W., Chicago, Ill., Nov. 11; Levette, Gilbert M., Indianapolis, Nov. 9; Newberry, J. S., New York, Nov. 13; Perry, W. S., Geneva, N. Y., Nov. 14; Pumpelly, Raphael, St. Louis, Mo., Nov. 11; White, C. A., Iowa City, Iowa, Nov. 11; Waters, J. Linton, Chicago, Ill., Nov. 9; Woods, Katie T., Salem, Oct. 24.

The letters from the "Agassiz Institute," the one by Dr. Thomas M. Logan, the President, the other by the Corresponding Secretary, Rev. J. H. C. Bonté, may be especially noticed, as officially announcing the organization of a scientific institution under the above name in Sacramento; and sending "its first greeting to the Essex Institute, Salem, Mass." "In framing our constitution and laws," Rev. Mr. Bonté writes, "we have used yours as our model, and we therefore address you first. Our opportunity for adding material for the study of natural history is, we think, great, and we begin with great hopes of a splendid future."

The LIBRARIAN reported the following additions :—

By Donation.

- FOOTE, C. Files of several County Papers, Aug., Sept., Oct., Nov., 1872.
 KIMBALL, JAMES. Freemason's Monthly Magazine, 1859-68, 10 vols.
 LEE, JOHN C. Commercial Bulletin, Oct. 26, Nov. 2, 1872.
 LOGAN, THOMAS M., of Sacramento, Cal. Report of the California State Board of Health, 1870-71, 1 vol. 8vo.
 PEABODY ACADEMY OF SCIENCE. Fourth Annual Report, 1871. 8vo pamph.
 SIBLEY, J. L., of Cambridge, Mass. Catalogus Universitatis Harvardianæ, 1872. 8vo pamph.
 U. S. PATENT OFFICE. Official Gazette, Oct. 15, 22, 29, 1872.
 WILLIAMS, HENRY L. Miscellaneous pamphlets, 4.

By Exchange.

- CROSSE ET FISCHER, Paris, France. Journal de Conchyl. Tome xii. No. 3, 1872.
 GEOLOGICAL SURVEY OF CANADA. Report of Progress for 1870-71. 8vo pamph.
 INSTITUT HISTORIQUE, of Paris, France. L'Investigateur, Jan.-Juin, 1872.
 L'ACADÉMIE IMPÉRIALE DES SCIENCES DE ST. PETERSBOURG, Bulletin of. Tome xvi, Nos. 1-6. Tome xvii, Nos. 1-3. Memoires. Tome xvii, No. 12, 1871. Tome xviii, Nos. 1-6, 1872.
 LITERARY AND HISTORICAL SOCIETY OF QUEBEC, Transactions of, 1871-72. New Series, Pt. IX. 8vo, 1872.
 NATURFORSCHENDEN VEREIN IN BRÜNN. Verhandlungen, Bd. ix, 1870.
 PHILADELPHIA ACADEMY OF NATURAL SCIENCES, Proceedings of. Pt. II. May-Sept., 1872. 8vo pamph.
 SOCIÉTÉ D'ANTHROPOLOGIE, Paris, France. Bulletin. Tome vi. 11e série, 3e fascicule. Oct., Nov., 1871. 8vo pamph.
 SOCIÉTÉ NATIONALE DES SCIENCES NATURELLES, Cherbourg, France. Memoirs. Tome xvi, 1871-72. 8vo pamph.
 SOCIÉTÉ ROYALE DES ANTIQUAIRES DU NORD KJØBENHAVN. Memoires, Nouv. Ser., 1870-71. 2 pamphlets, 8vo. Tillaeg til Aarbøger for Nordisk Old-Kyndighed og Historie, 1870, 1871. 2 pamphlets, 8vo.
 PUBLISHERS. Asher's Catalogue. Essex County Mercury. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Ipswich Chronicle. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Salem Observer.

The PRESIDENT called the attention of the Institute to a package of old papers recently presented by Mr. Eben G. Berry of Danvers. Several of the papers were read, and were interesting, showing the spirit of the times in which they were written. The following may be specified :

The commission of Benjamin Berry to be Ensign of the third Foot company in the town of Andover in the 4th Regiment of Militia in the County of Essex, whereof

Rich. Saltonstall, Esq., is Col. ; signed by Wm. Shirley, dated 2 July, 1754.

Bill of sale, Mr. George Daland of Salem to Mr. Benjamin Berry of Andover, for a negro named "Fortune," dated Aug. 30, 1756.

Warrant from Hon. Henry Gardner, Treasurer of Mass., to Benjamin Berry, constable or collector, dated 21 Feb., 1777, to collect the tax of 277£ 7s., assessed upon the town of Andover.

A summons from the selectmen of Andover to Capt. Benjamin Berry, surveyor of highways, dated March 19, 1767, requiring him to see that each person, named in this list, work out the sum annexed to their names in the months of May or June next ensuing, on the roads hereafter mentioned.

Several deeds of land, also military orders, for calling out the militia for inspection and parade.

Some of the papers proved that the "treating to the drinks" on every occasion of purchasing a new saddle or article of dress, etc., was a custom of that period, and a certificate of its performance was given. Thus :—

Andover, August 19, 1750.

This may Certify All Home It may Concern, That Mr. Benjamine Berry Hath Paid Suffitient Beaverige For A New Red Plush Saddle and lite Colard Housen To The Full Satisfaction of The Subscribers Hereof.

Henry Abbot.

Henry Abbot, Jr.

Andover, March the 19 day, 1756.

This may Certify All Home it may Concern that Benjamin Berry junr Hath Paid suffitient Beaverige for A new blew sarge Coot with blew morehare buttens with

A red lining to the full satisfaction of the subscribers hereof.

Benja. Berry.

Mary Robinson.

Mr. F. W. PUTNAM exhibited a photograph of a human skeleton found in a cave in France. This photograph, which had been sent to the Peabody Academy of Science by Mr. S. H. Scudder, formerly of the Boston Society of Natural History, now residing in Mentone, France, showed the skeleton, as found in the cave. Mr. Putnam, taking the photograph for his text, spoke of the great antiquity of man, as proved by the finding of human bones and the works of man in various caves in Europe, and in the river drift of various places.



THE ADJOURNMENT OF THE QUARTERLY MEETING from Wednesday the 13th inst., was then held.

Daniel B. Hagar was unanimously elected Vice President of the Department of the Fine Arts, to fill the vacancy caused by the resignation of George Peabody.

Arthur S. Rogers of Salem, Solomon Varney of Salem and John Todd Moulton of Lynn, were elected resident members.

Voted, That the regular meetings in December be held on the 2d and 4th Monday evenings in lieu of the 1st and 3rd.

BULLETIN

OF THE

ESSEX INSTITUTE.

VOL. 4. SALEM, MASS., DECEMBER, 1872. No. 12.

One Dollar a Year in Advance. 10 Cents a Single Copy.

REGULAR MEETING, MONDAY, DECEMBER 9, 1872.

Meeting this evening at 7 30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The evening was occupied by the reading of a communication, by Mr. John Robinson, on

FERNERIES, HOW TO MAKE THEM, AND WHAT TO PUT IN THEM.

Fern cases, or ferneries, as most of us call them, were originally called Wardian cases, in honor of their inventor, Dr. B. N. Ward of London, who published a book upon the subject in 1842. These cases are only a modification of the handglass always used to force or protect plants in the greenhouse or open air; yet the placing of this in a practical way renders it easy to import the plants of foreign tropical countries, which otherwise could never be seen here in a living state, besides enabling us to grow at home as beautiful ferns and other delicate, moisture-loving plants as are seen in the hot-house or conservatory.

The fern case, as it comes from the cabinet-maker's, is

a handsome piece of furniture, but an expensive one; so expensive, perhaps, as to deter many from possessing a fernery. This need not be, for at home a case can be made just as serviceable, and having some advantages even over the expensive ones.

Procure from your carpenter a good pine board, of the dimensions you may wish, for the base of your structure, which by the way should be about one-third longer than wide. Next obtain a suitable moulding, black walnut is the best, and fit it around the base board as if it was a picture frame on end. Next have a zinc pan made to fit closely inside of this, coming up to the top of the moulding; do not have any turned over edge or ring to the pan, as they are of no use, neither should the pan be made first, as it is difficult to make a neat box to fit outside it. Have the pan painted on the inside with a good coat of tar, as the delicate roots of the plants dislike to come in contact with a metal surface. Next comes the glass, and here is where most persons fail. Be sure the glass is inside the pan, and never have the pan inside the glass, for the moisture collecting on the glass runs down outside the pan to the woodwork, rotting it, and very likely between the moulding and base board on to the table or what else the case rests on, causing much trouble; also, in watering, the glass directs the water in like manner, with the same, if not worse, results.

A good proportion for the glass is to have it as high above the base as the case is wide, and it should go to the bottom of the pan; have the corners true and the top level, that the plate of glass which covers the top, and which should be one-fourth of an inch larger all around, shall be even. With common flour paste attach narrow strips of cloth up over the corner angles on the outside and but only an inch or so down the inside from the top.

When dry, paste some dark paper over it, so as to cover the cloth, also around the top plate of glass to prevent the edge from cutting your hands; no cloth is necessary for this. Fill and oil the black walnut moulding, and the case is complete.

A still more simple one is to tar the inside and paint the outside of a shallow pine box, and place the glass directly inside it. If you intend purchasing a handsome case, it will be better to have one made to order, as all the ready made ones usually offered for sale have the case poorly and incorrectly constructed in more ways than one; nearly all have flat tops, to be avoided where there is woodwork (the home made case having no woodwork at the top, it is not a disadvantage). One advantage possessed by the expensive case is that the whole top takes off, enabling you to work all around and not entirely from overhead. Here you may construct ruins, grottos, arches, etc., with pumice and cement; pumice is so light that it adds but little weight to the case, and the cement will bind the whole together as firmly as one rock, all at a very slight expense, at the same time adding much to the beauty of the interior. Very neat circular cases are for sale at the stores, and can be filled so as to be very attractive; they can also be used as fern nurseries. To do this, make the earth damp and firm on top, having first placed a few small pieces of broken flower pots in the upper soil. Take a leaf of some fern, or several different species of ferns, if you desire, that have the fruit quite ripe; this can be discovered by shaking over white paper, when, if ripe, a brown powder will come off; these are the spores or seeds. Dust these over the prepared earth, replace the glass, and leave the case in a warm shady corner. In a few weeks, if not permitted to become dry, a green scum will appear, which in time

will transform itself into the most beautiful little ferns, that may be separated, potted, or transferred to other cases.

Now to fill the case. First make, if the pan be three inches deep, about one inch in depth of drainage, pebbles, charcoal, broken bricks, or, better still, broken flower pots; over this a thin layer of moss or coarse fibrous stuff of some sort to prevent the earth washing into the drainage and choking it. Some cases have holes in the bottom and glass receptacles for superfluous water; but if care be used in watering, this will be entirely unnecessary. For soil suitable to grow most plants likely to be in the fernery, a mixture of one part sand, one part peat, two parts light pasture loam (leaf mould may be used for peat), will do well. The earth should be heaped up a little in the centre, or if the case is large two or three little elevations may be made; upon these place the larger ferns or plants, with the others distributed around them. A log of wood covered with moss and small ferns is a very pretty centre piece, and to cover the ground the little running *Selaginella*, common in all greenhouses, answers better than almost anything else, except our own native mosses, which must be treated with care, or else they mould or dry up.

Fergeries may be divided, if you like, into two classes, dormant and active. By dormant I mean such as contain plants which lie at rest during the winter months, chiefly our natives and others like them in habit that have been introduced. These it is well to arrange separately, as they require less heat than the species growing all the year round, chiefly from the tropics, which form the active fernery. The dormant fernery can be made very interesting, the plants in it keeping about the same all the winter, but growing towards spring; and as many like

the pleasure of filling their case every fall, this is as good a way as any to do, as it is a pretty ornament for winter, and in summer need not be cared for. Of the two thousand exotic species known to exist, but three hundred probably can be purchased in this country, and of these comparatively few are suitable to grow in the case. Most of the smaller growing species for sale hereabouts will do, particularly those of *Pteris*, *Doodia*, and *Adiantum* (maiden hair ferns). Gold and silver ferns require care, as the yellow and white farina washes off in watering. Besides ferns, *Begonias*, *Dracænas* and *Marantas* do well for the centre of a case, and many others can be tried; even if they do not succeed there is a pleasure in experimenting.

In New England there are about the same number of ferns as in Old England, forty-five or six. About Salem, say within ten miles' radius, there are sixteen genera, twenty-nine species; of these, few are suited to the fernery. The larger ones grow well in the garden, on the northerly side of a fence or building. Of the smaller ones, the ebony spleenwort, two or three of the *Aspidiums* or shield ferns, the *Asplenium Trichomanes*, do well; the climbing fern will look pretty for a while and some of the ferns which lose their foliage at the frost, will, if their roots be planted just under the moss, grow toward spring, such as the beech ferns, hay scented ferns, New York ferns and others. The moonwort, and common polypody which grows every where, should never be left out, and the harts tongue, and walking ferns, are valuable accessions if they can be had. This comprises about all the native ferns of use that can be collected here, but there are many little plants to associate with them which add much to the beauty of the case. The partridge berry (*Mitchella repens*) can be gathered in bunches, regardless

of roots, tucked in the moss and earth, where it will grow, bloom, and often fruit.

The rattlesnake plantain (incorrectly called adder's tongue), the *Hepatica*, gold thread, *Linnea*, all do well, and club mosses, wintergreen, checkerberry, all add to the effect. The larger foreign and native ferns may be grown in an open fernery, which should be in a room with as moist air as possible.

Do not drown your plants. Persons frequently ask, "How often shall I water my plants?" It is impossible to answer, except to say "whenever they are dry;" with the same amount of water per day, in a cool room the earth in a flower pot would be mud, while in a hot room it would be powder in a few hours. To avoid pests, mould, etc., sprinkle the ferns occasionally and give air an hour or more every day. Wiping off the moisture from the glass will take away many impurities. Cases sprinkled often seldom require watering, and it is surprising how long life will last on a small supply of water. I once planted in the bottom of an olive bottle a fern and some moss, corked it, and sealed the top over with sealing wax, placed it upon a light shelf, and left it; the fern flourished about a year, and weeds which sprang up lived six months longer; life lasted eighteen months in all, without the addition of a single drop of water.

Do not place the fernery at the southern window, in the full glare of the sun; an eastern or western one is better; turn it around every week that the plants may grow evenly. The case may be filled in August, to be established by winter. Some fill them as early as June, others not till October, but August is the best for the tropical fernery; the natives need not be attended to till September, if you like. Not only may ferns be grown in cases but some species are very beautiful as basket or pot plants.

A cocoanut may be formed into a very neat basket by sawing off the top and burning holes half an inch across all over the shell with two small ones at the top opposite each other for the wire to suspend it by ; if in this a fern is planted which has running roots with leaf buds, the effect is in time to cover the whole shell with the beautiful foliage, as these little roots find their way to every hole before long. For this, *Adiantum setulosum* and *A. Æthiopium* are the best. Baskets to hang in the top of a fern case may be made of thin pliable bark, wired together. Wire baskets lined with moss and filled with earth are fine for ferns with stems which run on top of the soil, such as most of the *Davallias*, *Polypodium aureum* a native of Florida, and others. The hare's foot fern is one such, throwing out woolly feet in advance of the leaves. A log hollowed out on one end is most suitable to grow the stag horn ferns upon ; they will in time form huge crowns on the top of the log, while little creeping species may be grown successfully on the side at the same time if wired on with a little moss and earth. Hollow stone ware pillows are made with pockets in the sides, the centre filled with earth, ferns planted in the pockets, and the whole covered with a bell glass. Wire netting can be formed into a tube filled with coarse earth, and ferns inclined to climb by rooting stems, as the ivy does, can be made to cover it with foliage. In fact, there is no end to the variety of design that can be introduced into the fernery whether it be a simple bell glass or a structure one hundred feet long by forty wide and high. Of this latter class of ferneries most beautiful ones are described in foreign books, where sometimes the side walls are of turf covered with the creeping *Lycopods* and ferns, while little brooks, mimic waterfalls and ponds add both to the beauty of the place and to the air, the moisture necessary for the

health of the plants. This is called the natural cultivation of ferns, and approaches as near as possible to their natural habitat. It is to be hoped that such will soon be established by our wealthy amateurs on this side of the water, as it is much more instructive than the ordinary way of growing these plants, and that there will be a steady increase in the already growing interest in ferns and ferneries.

The evening was made more enjoyable and the remarks much more interesting and clear by the exhibition of ferneries and plants upon the platform illustrating the subject. They were chiefly as follows: A large black-walnut fern-case (cabinet-maker's pattern) containing stone grotto and choice tropical ferns, *Selaginellas*, *Begonia rex*, etc.; a square home-made case (large) containing native plants entirely; circular fernery (large) containing tropical plants; log with a fine specimen of *Platyserium aleicorne*, stag horn fern growing upon the top, other ferns and mosses on the sides; wire basket with *Davallia*; cocoanut shells with maiden-hairs; bell glass with *Adiantum Capillus-Veneris* or English maiden-hair, also other ferns in pots, cut fronds, etc.

Ferns suitable for ferneries which can be purchased at the greenhouses at fifty cents or less:—

<i>Pteris serulata</i> ,	<i>Adiantum Capillus-Veneris</i> ,
“ <i>argyrea</i> ,	“ <i>affine</i> ,
“ <i>longifolia</i> ,	“ <i>Æthiopicum</i> ,
“ <i>tremula</i> ,	“ <i>cuneatum</i> ,
“ <i>cretica</i> , var. <i>albo-lineata</i> ,	“ <i>fulvum</i> ,
<i>Pellæa rotundifolia</i> ,	“ <i>hispidulum</i> ,
“ <i>hastata</i> ,	<i>Aspidium molle</i> ,
<i>Gymnogramme sulphurea</i> ,	<i>Selaginella Martensii</i> ,
“ <i>calomelanos</i> ,	“ <i>densa</i> ,
<i>Doodia caudata</i> ,	“ <i>Braunii</i> ,
<i>Asplenium Mexicanum</i> ,	“ <i>Kraussiana</i> ,
<i>Onychium Japonicum</i> ,	“ <i>uncinata</i> .

The SECRETARY announced the following correspondence :—

From E. A. Andrews, Lancaster, Fairfield Co., Ohio, Nov. 22; John Collett, Indianapolis, Ind., Nov. 18; C. W. Jenks, Philadelphia, Penn., Nov. 23; John Todd Moulton, Lynn, Nov. 25; G. C. Swallow, Columbia, Boone Co., Mo., Nov. 20; Henry White, New Haven, Conn., Nov. 29; A. Winchell, Ann Arbor, Nov. 25; Berwickshire, Naturalists' Field Club, Aug. 26; Bogota, La Souldad de Naturalista Columbiano; Brooklyn, N. Y., Mercantile Library Association, Nov. 21; Danvers, Peabody Institute, Dec. 2; Lund, Die Carolinische Universitate, Aug. 1; Würzburg, Die Physicalische Medicinische Gesellschaft, Aug. 28.

THE LIBRARIAN reported the following additions :—

By Donation.

AGASSIZ INSTITUTE, of Sacramento, Cal. Constitution and By-laws of. 8vo pamph, 1872.

CLOGSTON, WM., of Springfield, Mass. Oswego County Directory, 1866-7, 1 vol. 8vo. Utica City Directory, 1858-9, 1 vol. 12mo. Bangor Directory, 1867-8, 1 vol. 12mo. Brattleboro Directory, 1871-2, 1 vol. 8vo. Ontario County Directory, 1870, 1 vol. 12mo. Directory of Cities and Villages on the line of the Boston & Albany Railway, 1869-70, 1 vol. 8vo. Erie Business Directory, 1867-8, 1 vol. 8vo. Directory of Binghamton, Elmira, Ithaca and Oswego, 1864-5, 1 vol. 12mo. Janesville Directory, 1859-60, 1 vol. 12mo. American Advertising Directory, 1831, 1 vol. 12mo.

FARMER, MOSES G. Patent Office Reports, 22 vols. 8vo. Department of Agriculture, 4 vols. 8vo. Finance Report, 1870, 1 vol. 8vo. Commercial Digest, 1 vol. 8vo. Compendium of U. S. Census, 1850, 1 vol. 8vo. Cyclopædia of Commerce, 1 vol. 8vo. The Practical Model. 7 nos. Journal of the Telegraph. 72 nos. Engineering. 32 nos. Journal of Chemistry. 24 nos. Salem Directories for 1851, 1853, 1855, 1857, 1859, 1864, 6 vols. 12mo; 1866, 1869, 2 vols. 8vo. Congressional Globe 1855-6, 2 vols. 4to. Scientific American, 4 vols. folio. Miscellaneous pamphlets. 65. Scientific American. 610 nos.

GREEN, S. A., of Boston. Miscellaneous pamphlets. 20.

LEE, JOHN C. Commercial Bulletin, Nov. 9, 16, 1872.

MIDDLESEX MECHANICS' ASSOCIATION, Lowell, Mass. By-laws etc., of the Library and Reading Room, 8vo pamph. 1872.

U. S. PATENT OFFICE. Official Gazette for Nov. 5, 12, 1872.

By Exchange.

ARCHIV DER ANTHROPOLOGIE IN BRAUNCHWEIG. Band v, Heft III, 1872. 4to pamph.

BERWICKSHIRE NATURALISTS' CLUB. Proceedings of, 1871-2, 8vo pamph.

GEOLOGICAL AND POLYTECHNIC SOCIETY OF THE WEST RIDING OF YORKSHIRE. Proceedings of, New Series Pt. 1, pp. 1-56, 1871-2. 8vo pamph.

KONGLIGA UNIVERSITETS LUND SWEDEN. Lund Universitets Biblioteks Accessions Katalog, 1869, 1870, 1871. 3 pamphlets 12mo. Acta Universitatis Lundensis, 1868, 1869, 1870. 7 pamphlets 4to.

NATURHISTORISCHEN GESELLSCHAFT ZU HANNOVER. Einundzwanzigster gah-resbericht, 1870, 1871. 8vo pamph.

NATURHISTORISCHEN VEREIN DER PREUSSISCHEN RHEINLANDE UND WESTPHALENS IN BONN. Verhandlungen, xxviii, xxix. Jahrg. 1871, 1872. 2 pamphlets 8vo.

NATURWISSENSCHAFTLICHEN VEREINE ZU BREMEN. Abhandlungen Band iii, Heft II, 1872. 8vo pamph.

PHILOSOPHICAL AND LITERARY SOCIETY. Annual Report for 1871-2. 8vo pamph.

PHYSIKALISCH-MEDICINISCHE GESELLSCHAFT IN WÜRZBURG. Verhandlungen, Neue Folge. Bd. iii. Heft 1, 2, 1872.

SOCIÉTÉ D'ACCLIMATATION, Paris. Bulletin Mensuel. Tome ix, Nos. 6, 7, 1872. 2 pamphlets, 8vo.

VERMONT STATE LIBRARY. Vermont Legislature Directory, 1872-3, 1 vol. 12mo. Montpelier, 1872.

PUBLISHERS. American Journal of Science and Arts. American Naturalist. Christian World. City Post. Gloucester Telegraph. Haverhill Gazette. Historical Magazine. Ipswich Chronicle. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press. Sailors' Magazine and Seamen's Friend. Western Lancet.

The SUPERINTENDENT of *Museum* reported the following:—

From FARMER, MOSES G. Portrait of Bishop Griswold.

LAMSON, F. Paper-weight, formerly belonging to Charles Dickens, bought in London by donor.

MARSH, Miss MARY. A Loom, used in the farmer's family in the last century.

PORTER, Miss M. A. View of Northey's Block, built in 1872.

STIMPSON, JAMES C. Relics from the Boston Fire, November, 1872.



REGULAR MEETING, MONDAY, DECEMBER 23, 1872.

Meeting this evening at 7 30 o'clock. The PRESIDENT in the chair. Records of preceding meeting read.

The SECRETARY announced the following correspondence:—

From T. C. Amory, Boston, Dec. 19; Jacob Batchelder, Lynn, Dec. 5, 18; P. A. Hanaford, New Haven, Dec. 12; Charles V. Hanson, Peabody, Dec. 13; Alfred Osgood, Newburyport, Dec. 13; Proctor Bros., Gloucester, Dec.; Buffalo Historical Society, Dec. 19; Peabody Institute, Danvers, Dec. 14; New Jersey Historical Society, Dec. 21.

The LIBRARIAN reported the following additions :—

By Donation.

AMORY, THOMAS C. Our English Ancestors, 8vo pamph. A Home of the Olden Time, 8vo pamph.

BOARDMAN, S. L., of Augusta, Me. Agriculture of Maine, 1871, 1 vol. 8vo. Water Power of Maine, 1 vol. 8vo, 1869. Report of the Commissioners on "Paper Credits," 1870, 1 vol. 8vo. Miscellaneous pamphlets, 7.

CHAPMAN, G. R. Annual Report of the American Board of Commissioners for Foreign Missions for 1872. 8vo pamph. Sermon by Dr. Bartlett at the Annual Meeting in New Haven, Ct., Oct. 1, 1872. 8vo pamph.

GREEN, S. A., of Boston. Miscellaneous pamphlets, 5.

HAMMOND, J. Memoirs of Russia from 1727 to 1744. 1 vol. 4to. London, 1773.

LEE, JOHN C. Commercial Bulletin, Dec. 7, 1872.

PEIRSON, GEO. H. Proceedings of the Grand Lodge of the Most Ancient and Honorable Fraternity of Free and Accepted Masons of Mass., Mch. 8-Dec. 27, 1871. 1 vol. 8vo.

STONE, JOSEPH W. Salem Directories for 1842, 1850, 1853, 3 vols. 12mo.

U. S. PATENT OFFICE, Washington, D. C. Official Gazette, Nov. 26, Dec. 3, 1872.

WHITE, CAPT. A. H., of Boston, The White and Haskell Family, compiled by P. Derby, 1 vol. 8vo. 1872.

By Exchange.

SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY OF TAUNTON, Proceedings of, for 1871. 12mo pamph.

PUBLISHERS. Gardener's Monthly. Gloucester Telegraph. Hardwicke's Science Gossip. Haverhill Gazette. Ipswich Chronicle. Lawrence American. Lynn Reporter. Lynn Transcript. Medical and Surgical Reporter. Nation. Nature. Peabody Press.

The PRESIDENT read a communication from Rev. P. A. Hanaford of New Haven containing a memoir of Miss Quiner of Beverly. Referred to the committee on publications.

The PRESIDENT read a communication from Nehemiah Cleaveland, Esq., containing a sketch of the life of his grandfather, Rev. John Cleaveland, of that part of Ipswich known as Chebacco, now the town of Essex, with the letters and journals copied and condensed of the campaign of 1758, having received the appointment of chaplain to one of the regiments from Gov. Pownall. Referred to the publication committee.



